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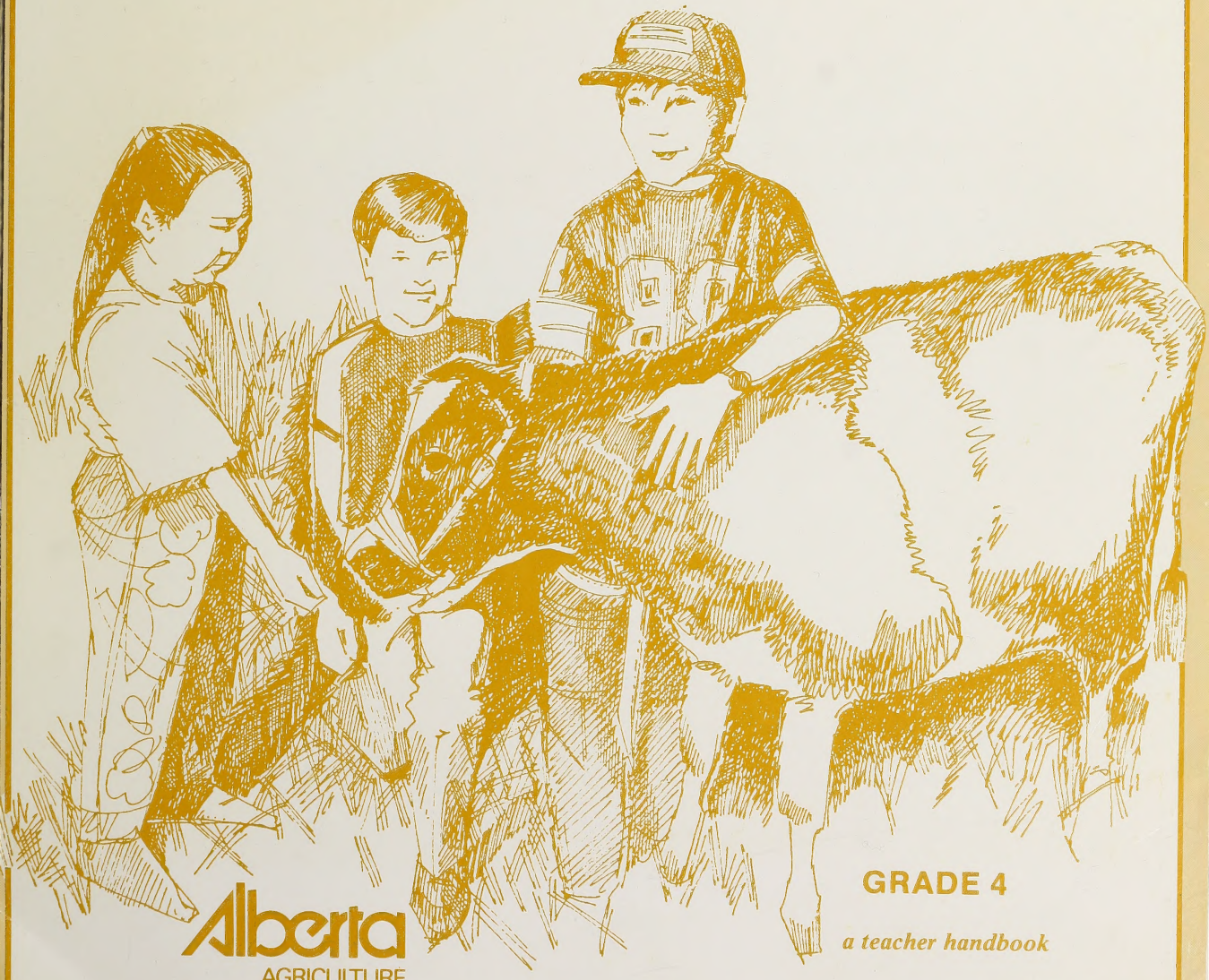
# Pride in Alberta



GRADE 4

*a teacher handbook*

Alberta
AGRICULTURE

January, 1988
For further information contact:

Ag. in the Classroom Program
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Alberta Agriculture

# P R I D E  I N  A L B E R T A

A Resource Book for Teachers

Division 2

By

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Dave Morris, Betty Gabert
Editing, Artwork and Production.

ALBERTA AGRICULTURE

1988

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# INTRODUCTION

You are invited to use the material in this handbook in your everyday classroom planning and activities. The integrated lessons use a whole language approach for investigating and participating in social studies and science concepts which are recommended in the current Alberta Education curriculum.

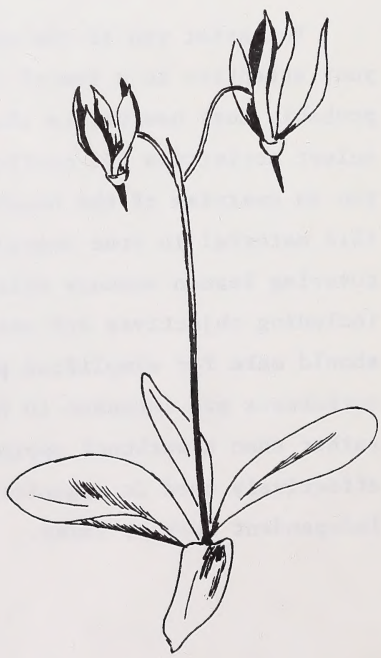
This is the second edition of Pride in Alberta. Revisions have been made to the pilot edition which I hope will reflect the concerns of teachers who evaluated the activities in their classrooms. Probably the most obvious change is that the format is now three separate handbooks which are designed for individual grade levels. I would, however, encourage teachers who may wish to borrow lessons not specifically designed for this grade level to do so. These activities are intended to be modified and adapted to your special needs and the particular needs and interests of your students. Many educators who have attended workshops which highlight these handbooks have expressed the usefulness of the handbooks for enrichment and split classes. I sincerely hope that they can be used effectively in your classrooms.

To assist you in the use of this resource, I would like to draw your attention to a few of the features of the handbook. First, and probably most useful, is the Curriculum Connection Chart. Use this to select activities for particular subjects and topics. This will give you an overview of the handbook and should help you to include some of this material in your overall plan. Second, each activity includes a covering lesson summary which should further clarify the activity including objectives and materials required. Lesson plans and resources should make for simplified preparation and execution. The student worksheets are intended to be used as thought and activity organizers rather than a workbook approach to seat work. These may be most effectively used in organizing student group work and the planning of independent work or tasks.

Alberta Agriculture film library and publications library may have some additional relevant resources. You are encouraged to write for a publication list and a film catalogue.

Alberta Agriculture
Publications Office
or Film Library
7000 - 113 Street
EDMONTON, Alberta
T6H 5T6

The original writing and subsequent revision of this resource has been a most enlightening experience. I have re-established communications with classroom teachers while increasing my understanding of the significant role of Agriculture in Alberta society in the past, for the present, and in the future. Work with the Ag. in the Classroom Program has been an exciting experience. I hope that the enthusiasm I feel personally is reflected in the presentation of the following activities.



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**Thanks for Comments:**

to all teachers who evaluated this pilot edition, and to the review committee from Alberta Education.

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# Curriculum Connection

| LESSON TITLE | SUBJECT AREA | CURRICULUM CONNECTION |
|---|---|---|
| "Latest and Greatest" | Social Studies | Alberta, Past, Present, Future: Our Human Resour |
| "Cultivation vs. Grazing" | Social Studies | Alberta, Past, Present, Future:<br>Our Natural resources. |
| "Planning to Move to Homestead" | Social Studies | Alberta, Past, Present, Future: Major Factors tha influenced settlement.<br>Transportation. |
| "Finding the Homestead" | Social Studies | Alberta, Past, Present, Future: How people in earlier times met their needs.<br>Major factors that influenced settlement.<br>Natural Resources. |
| "First Year on the Homestead" | Social Studies | Alberta, Past, Present, Future: How people in earlier times met their needs. |
| "International Supper" | Social Studies | Alberta's link with Canada and the World. |
| "Discover Dairying" | Social Studies | Alberta, Past, Present, Future.<br>Major Factors that influenced settlement.<br>Our human resources. |
| "Looking Through Different Eyes" | Language Arts | Creative writing and observation. |
| "Fun Facts" | Language Arts | Reading for Understanding.<br>Communication skills. |

| MAJOR CONCEPTS | RELATED SUBJECT SKILLS | PAGE |
|---|---|---|
| Change, resourcefulness, lifestyle, occupations. | Art<br>Language Arts | 1.1 |
| The effects of climate and geography on agricultural land use. | Language Arts<br>Science (Soil) | 2.1 |
| Change.<br>Resourcefulness. | Drama<br>Language Arts<br>Art | 3.1 |
| Resourcefulness,<br>Growth, Development. | Drama<br>Language Arts | 4.1 |
| Resourcefulness,<br>Growth, Lifestyle. | Art<br>Language Arts | 5.1 |
| Trade. | Art | 6.1 |
| Research leads to changes in lifestyle and industry. | Language Arts | 7.1 |
| Regions.<br>Industry. | Social Studies | 8.1 |
| Understanding and relating ideas. | Social Studies<br>Science | 9.1 |

# Activity 1

## LATEST AND GREATEST

**Activity:** Students invent, build, and market a farm tool.

**Subject Area:** Social Studies.

**Curriculum Direction:** Alberta, Past, Present and Future: Our Human Resources.

**Major Concepts:** Change, resourcefulness, lifestyle, occupations.

**Lesson Concept:** The world is in a constant state of change. Technological innovations respond to changing needs while at the same time creating an additional need for change. Albertan's adjust their life-style to meet new opportunities and challenges.

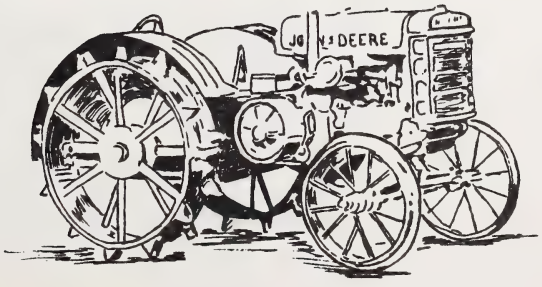
**Purpose:** To develop the concept of change through the study of mechanization on Alberta farms.

To explore the future possibilities of advanced technology in agriculture.

To experience a problem solving situation.

**Materials Required:** Art supplies.
Miscellaneous building supplies.
Optional - tape recorder, or video camera.

**Time Required:** 2 - 5 class periods.



## BACKGROUND — to the teacher

The time required to complete this lesson has been left to your discretion. The complete exercise could involve a good measure of class and home study time. While the concepts are clearly outlined in the social studies curriculum, the skills required include those from language arts, drama and art disciplines.

The objective of this lesson is to get students actively involved in creating a new product which they must market to the rest of the class.

## PROCEDURE

**Part 1**

Introduction:

1. Introduce the concept of change through a class discussion. Review the history of farm mechanization and how it is a good illustration of a factor which created a change in Alberta's history.

2. Using the resources supplied, review the development of farm machinery. Three areas of the history should be emphasized.

   a) The types of tractors introduced and some of their features.

   b) The effects the mechanization had on the industry.

   c) The human element of change including:
   - attitudes to change
   - the ripple effects of major changes
   - the impact of mechanization on rural lifestyles.

**Part 2**

Problem Solving:

3. Divide the class into groups and challenge them to invent a new or renovated machine to do a simple farm chore.

   a) A machine helps people to do work. Examples of classroom work that is made easy by machines include pencil sharpening and stapling.

   b) Discuss various jobs that are done on a farm (e.g. ploughing, threshing). The jobs could be as simple as pitching hay into a feeder.

Concept 1

We use machines to help us do jobs.

- Pencil sharpeners are used to sharpen pencils.
- Tractors are used to help with farm work.

We now have electric pencil sharpeners but not everyone has one. Many of us still use a hand sharpener.

There are very advanced tractors working on farms too, but not everyone has one.

Concept 2

When we make changes we sometimes keep a part of the past while staring to accept new things.

**Part 3**

Construction of a Model:

4. Have the students build or draw their inventions

5. Have the students demonstrate the completed models. Be sure to include such information as materials and operation directions.

**Part 4**

Marketing:

6. Ask the groups to create advertisements to sell their inventions.

   Some suggested selling techniques may be:

   - Role play (a door to door salesman for example).
   - Posters or print ads.
   - Radio commercials done on a tape recorder.
   - T.V. commercial done on a video tape.

**Part 5**

Conclusion:

7. Review the exercise. Have the students present their marketing schemes to the class.

## FOR DISCUSSION

1. Do the students think the inventions might be superior to existing machines?
2. Did the implement require extensive change on the part of the buyer in order to be utilized?
3. Could some of the inventions revolutionize the industry?
4. Were the inventions based on previous models or were they a totally new idea?
5. How did the class respond to the advertising campaign? Is this typical of most people?

## RELATED ACTIVITIES

1. Take a trip to a local museum.
2. Visit a small town fair.
3. Visit a farm to view the range and age of machinery in use.
4. Write to an implement dealer for information on their latest machinery line.

# Teacher Resource

## Mechanization of Alberta Farms

Farm tractors provided the technology which revolutionized the industry and stimulated human resourcefulness resulting in a dynamic sequence of change.

The first gasoline tractors were built in the 1880's. They did not gain general acceptance for many years. Economical, mechanical and political problems hindered the replacement of draft animals by machines.

> "For the ordinary grain farmer, the gasoline tractor was an interesting experiment which he followed in the pages of the Grain Grower's Guide or the Farmer's Advocate, not something in which he would invest $1700 (the price of the cheapest model entered in the 1909 Winnipeg competition). Those few who had the courage or the foolhardiness to do some of the experimenting on their own farms soon discovered that gasoline tractor engineering was still in its infancy. Primitive electrical systems meant that starting was complicated and uncertain - Hart Parr's 1910 manual listed nineteen steps for starting the engine - and a popular joke lampooned the tractor farmer who left his machine running all night during seeding rather than risk a restart the next morning. Drive gears were not enclosed and were made of cast iron so that dust and dirt caused rapid wear in dry weather. Heavy steel wheels, sometimes six and eight feet in diameter, made tractor field work impossible when the weather was wet. Breakdowns were common, costly, and time-consuming. When broken crankshafts, warped clutches, dead magnetos, burned-out bearings, or faulty plugs put a machine out of action, parts were difficult to obtain. Throughout Canada and the United States, scores of independent manufacturers tried to turn out tractors for farm use and few stayed in business long enough to establish reliable parts networks."1

"It was in the early nineteen-twenties that the first modern tractors came on the market. Equipped to deliver power through drawbar, belt pulley and power take-off, and with their enclosed gears, automotive type steering and better protection from dust, they paved the way for more attractive and efficient operation."

Then in the thirties, came the rubber-tired tractors with their higher speed operation and lower operating costs. This higher speed meant machinery to suit. The old implements, designed for the pace of the team, were not sufficiently durable for the stress placed upon them by this new power change. The result was the opening of a whole new field, and a challenge to the ingenuity of that rapidly expanding group of professionals, the agricultural engineers.

So the one-way succeeded the plow and the combines followed the binder, while in the field of haying machinery many changes were to occur. Then too, motor trucks, grain loaders and grain cleaners all helped to reduce the farmer's chores and allow more efficient use of his limited, busy-season time.

But the story of farm mechanization in Alberta and the west has not been one of steady progression. During depression and unemployment there was little demand for farm mechanization; but the labour shortage of the war years, and the now growing need for products of the farm, have resulted in a steadily increasing demand for better and still better equipment.

Although, in the mid 1920's the tractor was coming more and more into use for general farm work, it was as yet by no means accepted by the majority of farmers. "Farmers are finding it more economical to work their lands with horses than with tractors", said the Livestock Commissioner in 1924. "And", he continued, "while there is a place for the tractor on the large farm, it will only be used in conjunction with horses."

But the tractor was gaining favour and by 1928, since the work could be done much more quickly, more and more tractors were appearing on the farms. Economically, however, the horse remained in favour, and this showed strongly when in the 1930's the dark clouds of depression gathered. But shortly before this, the sale of tractors was heavy, and some firms were trading tractors for horses and shipping the horses east. Still, said the horse lover, there will remain a demand for good farm horses, since the tractor cannot entirely replace the horse on Alberta farms.

And when in 1930, effects of the depression began to be felt, there seemed to be some truth in their assertion. With the low price of wheat and the high price of gasoline and oil, the horse for farm use was again in favour. "The farmers of late years have been relying on motor power" said the Livestock Commissioner in 1931, "and therefore have not been raising many colts. In the past year a great many were forced back into using horses, and this created considerable demand."

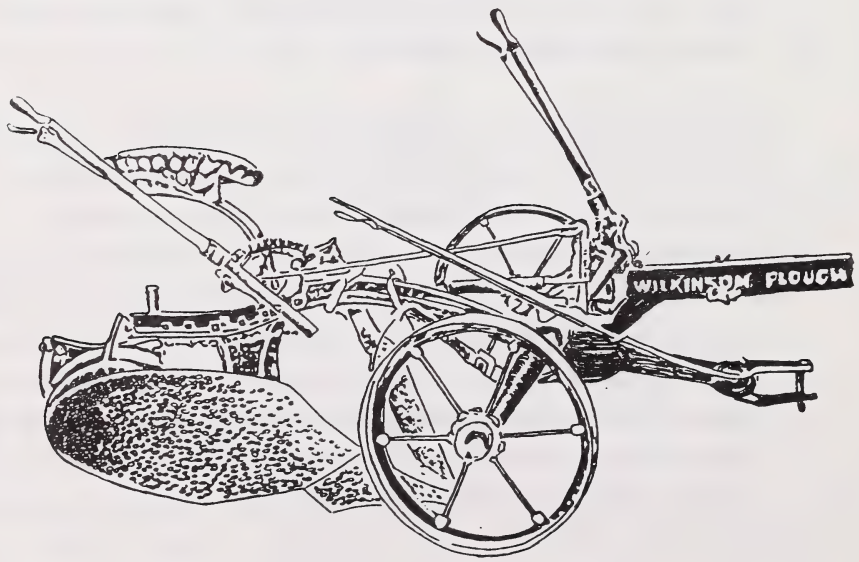
As late as 1938 we find the Alberta Department of Agriculture advising: "The demand is still growing, even though gradually, for draft horses for farm work. This is possibly due to the steady migration of settlers from the southeastern section of the province (most recently known as the drought area) to the northern part of the province, where in many cases, these settlers are now using horses in place of their previously used farm tractors and machinery, which have now become worn and depleted, and also to the fact that the smaller land holdings are more adapted to horse work."

It was not until after the war years, with their demand for increased production and their farm labour shortage, that the tractor again became the prime motive power on the farm.

Power machinery for field use does not of course tell the whole story of farm mechanization. Electricity on the farm and the labour saving devices of dairying, and stock raising are a far cry from pioneer days, or from even the more advanced type of agriculture practiced in Alberta twenty years ago.2

1. Alberta Agriculture Historical Review, E.B. Swindlehurst, 1967.

2. "The Adoption of the Gasoline Tractor in Western Canada" Robert E. Ankli, H. Dan Heisbert, John Herd Thompson, 1980.



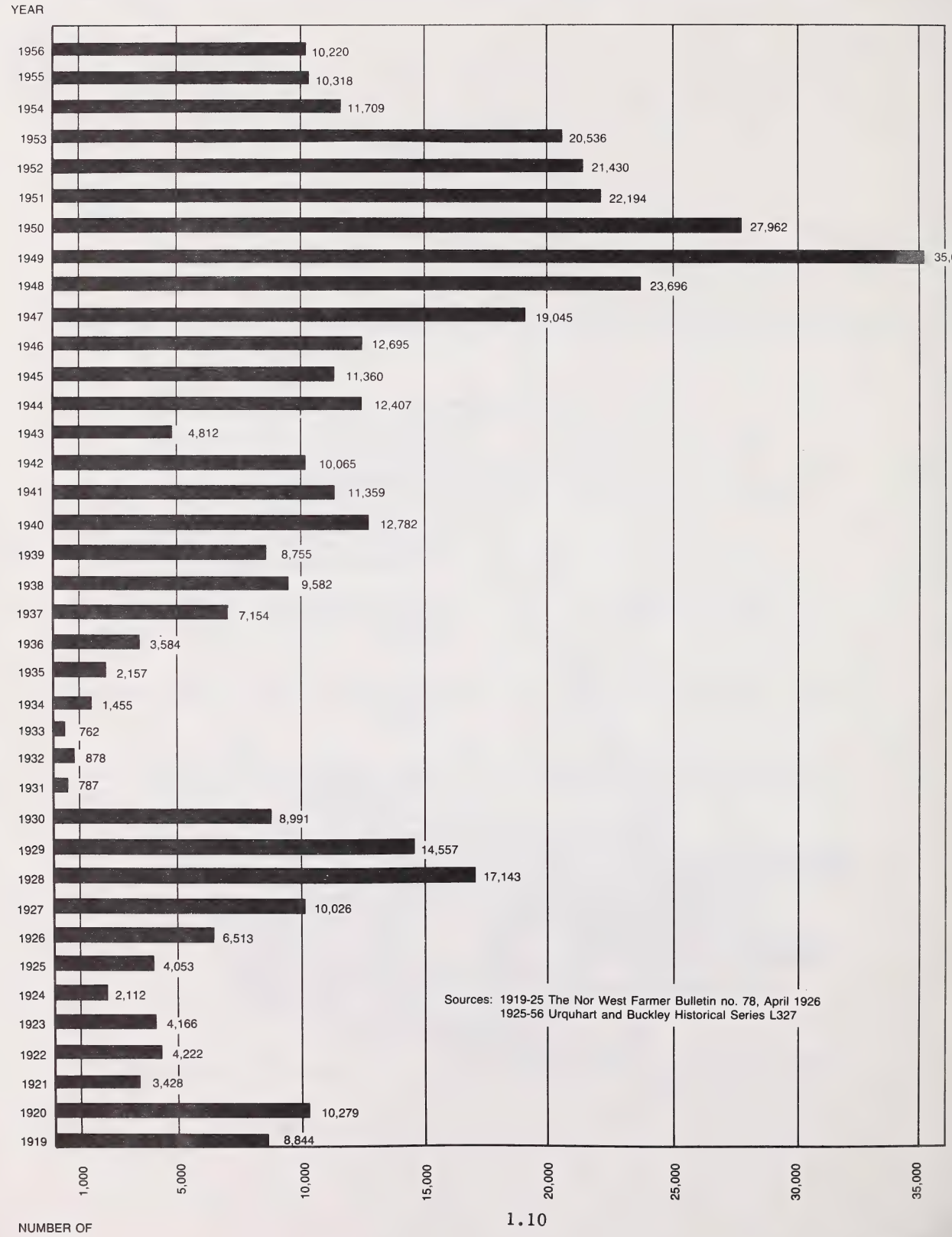
## Teacher Resource

# Factors That Influenced The Acceptance of Modernization On Farms In Alberta

| | | |
|---|---|---|
| a) | Ability to purchase. | - Farm product prices must be sufficient to warrant investing in new machinery.<br>- Yields must be sufficient to receive good profit after payment of capital expenditures. |
| b) | General economy. | - The availability of credit.<br>- Effects of the depression of the 1930's. |
| c) | Personal need. | - Shortage of manpower during the war years.<br>- Costly labour. |
| d) | Mechanical reliability. | - Early tractors were unreliable and parts were often unavailable. The farmer's mechanical skills were not advanced enough to do repairs. |
| e) | Efficiency of the new methods as compared with traditional methods. | - Many studies were done to compare the performance of tractors and horses to do farm work. |
| f) | Major world events. (See graph - page 1.15.) | - The Great Depression.<br>- World War II. |

NOTE: Many farms used a combination of horse and tractor power until after 1945.

# TRACTOR SALES IN THE PRAIRIE PROVINCES 1919-1956




Sources: 1919-25 The Nor West Farmer Bulletin no. 78, April 1926
1925-56 Urquhart and Buckley Historical Series L327

Inventions were always welcome if they could help to reduce the labor of farming.

Owen Gilbert's invention
Stookers 1930.

Provincial Archives of Alberta.
H. Pollard collection, P738.

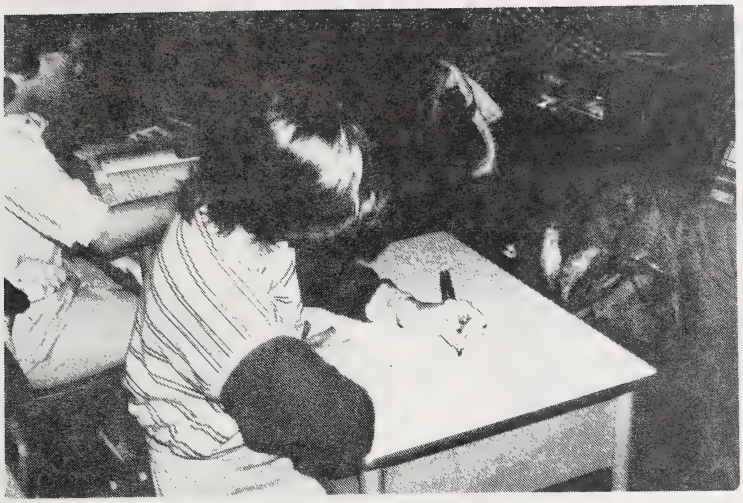
Combine Harvesting near Lethbridge 1948.
Provincial Archives of Alberta.
H. Pollard collection, P724.

Hay Making was a Boy's Job

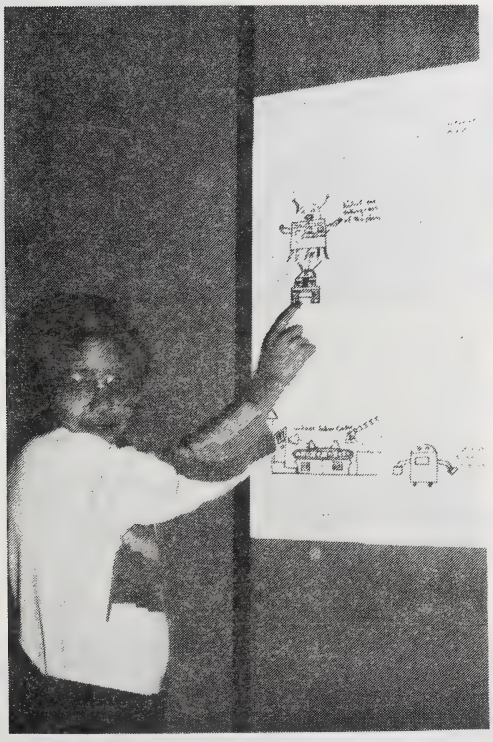
Horse drawn rake, 1915.
Provincial Archives of Alberta.
A 9615.

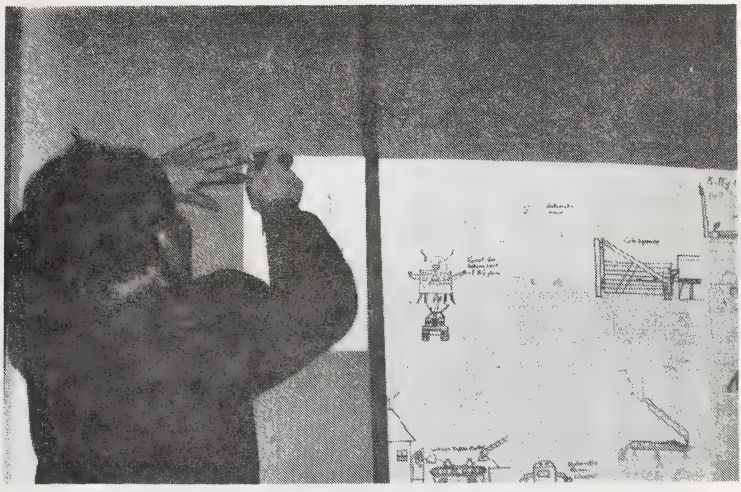
Ploughing Scene near Calgary, 1884.

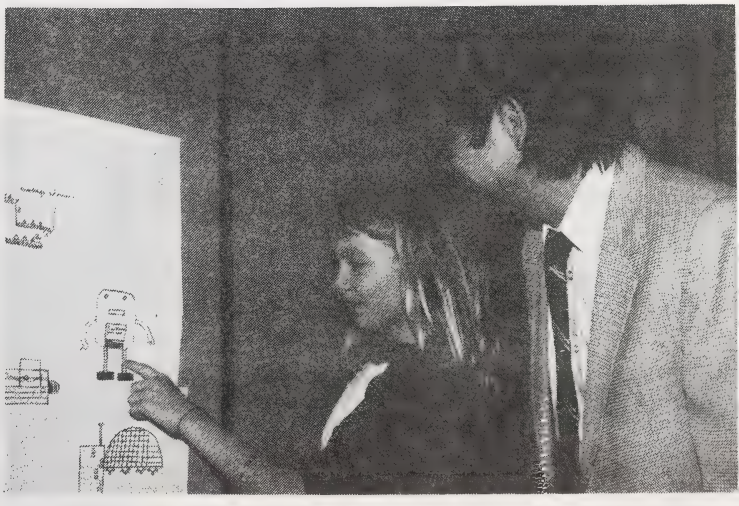
Provincial Archives of Alberta.
E. Brown collection B78



Students from Joe Clark School in High River create, display and market their inventions.

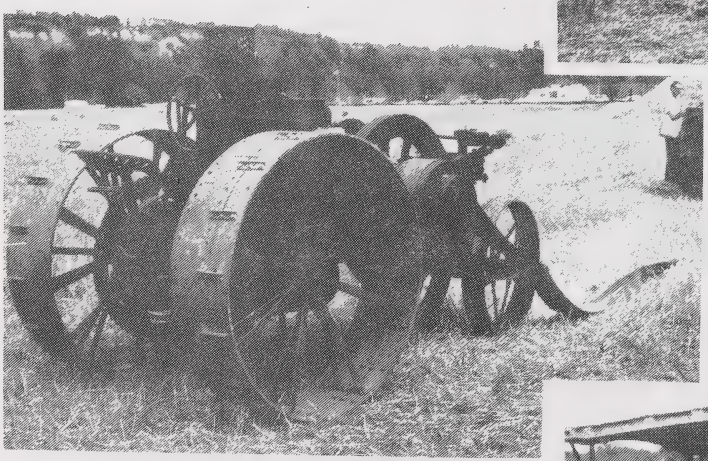




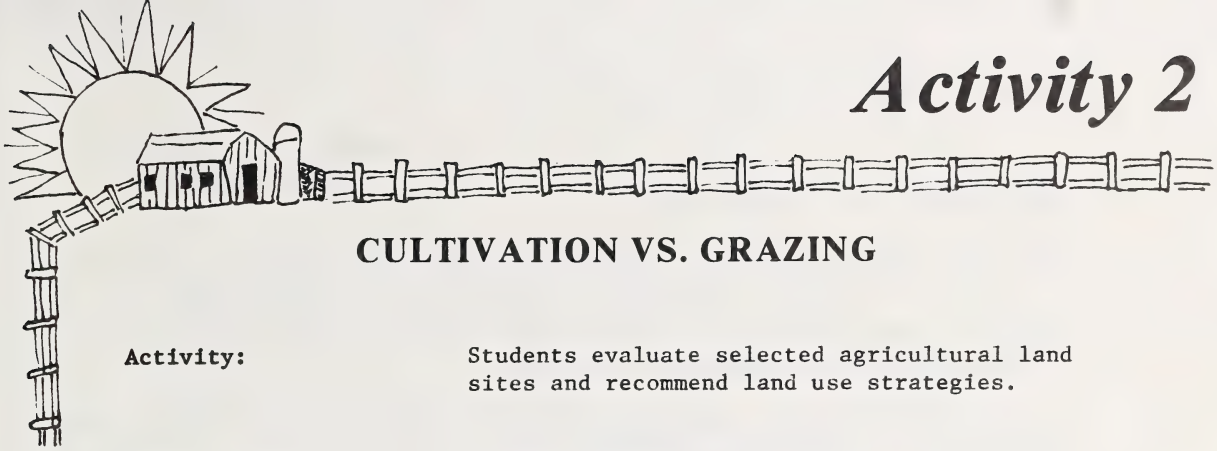


"Students were very keen about designing, sharing and selling their own machines."

The acceptance of tractor power was slow.



Scenes from Fort Edmonton Park kindly donated by Al Kosmak.



# Activity 2

## CULTIVATION VS. GRAZING

**Activity:** Students evaluate selected agricultural land sites and recommend land use strategies.

**Subject Area:** Social Studies.

**Curriculum Direction:** Alberta, Past, Present and Future: Our Natural Resources.

The effect of climate and geography on agricultural land use.

**Major Concepts:** Natural resources, conservation, human needs, consumption.

**Lesson Concepts:** Responsible management of Alberta's agricultural resources is essential in order to maintain the productivity of one of our greatest resources - the land.

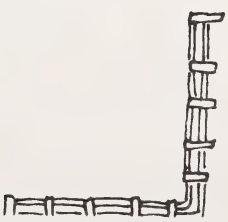
Grazing is a logical alternative to cultivation on poor quality or fragile land.

**Purpose:** To introduce students to the concepts of conservation of natural resources while meeting human needs.

To give students an opportunity to explore issues of land use related to Alberta's food industry.

**Materials Required:** Supplied in this lesson.

**Time Required:** 1-2 class periods.



## BACKGROUND — to the teacher

When the pioneers came to Alberta, good land seemed to be unlimited. Prairies, parklands and boreal forests formed endless expanses of vegetation. Settlers soon discovered the best farming regions and began to till the land, in order to grow crops and food for themselves, their livestock, and some for export.

Not all settlers were fortunate enough to select the best soils. Some agricultural production limitations were visible from a quick look at the property, while others remained to be discovered. Farmers identified good crop land by looking at such things as terrain, soil types, and weather patterns. This may have led to rather hasty decisions, based on the very sketchy information of a hundred years ago. Today, most of Alberta has been surveyed; the soil types and their related agricultural capabilities have been determined.

It is the modern farmer's responsibility to gather as much of the available data together and make a decision as to what is the best possible land use for a particular piece of property.

This is not a new idea. As long as man has been cultivating the soil, good land use has been a concern. The amount of good, arable land is limited. Our farming practices must be efficient and conservationally sound, so that we maximize production while maintaining or improving the capabilities of the land.

In this lesson we will take a look at two major agricultural land uses. We will examine what determines the farmer's choice of farming practices. One alternate choice of utilization of some of our less productive land is also presented.

The two major land use choices to be considered in this exercise are grain cropping or pasture. This may not appear to be a very serious issue on the surface; however, you will find that many things influence the final decision as to the best land use for any area.

## PROCEDURE

**Part 1**

Introduction:

1. Discuss land use - What is it?

   In this lesson we will look at two ways that land can be used for food production.

   a) cultivation
   b) grazing or pasture

2. Review the "Key Words" resource with students.

**Part 2**

Evaluating:

3. Alberta has a variety of land types. Review the student resource "Factors Related To Agricultural Land Use."

4. Pass out the work sheet "How Would You Use This Land?" and see if the students can select the best land use for the three farms.

**Part 3**

Researching:

Alberta can be generally classified into ecoregions. These large areas are constant in many ways; such as soil, terrain, and weather conditions. For example, the Grasslands are flat to rolling, have brown soil and have limited rainfall. These conditions favour grass as a native vegetation.

5. Review the ecoregion map and the general characteristics of each of the regions (from the information supplied in this lesson.)

6. Have the students find their location on the ecoregion map. What region are they in?

7. Ask students to complete the worksheet "Getting To Know My Region".

8. Make a list of possible consequences of poor use of agricultural land.

**Part 4**

Conclusion: We all recognize that it is important for our agricultural land to be as productive as possible. The demand for food is ever increasing. The supply of farm land is ever decreasing.

Ideas: Misuse of the land may result in some serious problems. Non-use of useable land can result in a shortage of food.

We have looked at the best use for the land types given on the work sheet. Now let us consider what might be the consequences of misuse. First, what are some of the other agricultural uses for lands described in this exercise?

## FOR DISCUSSION

1. What is a result of the expansion of urbanization into prime farm land?
2. Should this be subject to control?
3. Are there any regulations regarding this issue in Alberta?
4. What ecoregion do you live in?
5. What do some of the farms in your area produce?
6. What are some of the topographical features of your area?
7. How are the agricultural products related to the land features?
8. How does the land change as you move out of your area?

   North West South East

## RELATED ACTIVITIES

1. Do a survey of agricultural land use in your area. What fraction of the land is used as pasture?

## RELATED ACTIVITIES

1. Do a survey of agricultural land use in your area. What fraction of the land is used as pasture?

2. Stage a debate.

   The Ranchers (Grazing) vs. The Farmers (Cultivation)

## OPTIONAL RESOURCE MATERIAL

1. The film, "The Sun Changers" available from the Department of Agriculture.

# How Would You Use This Land?

**Worksheet**

## A

Topography . . . . . Gently rolling.
Soil Type . . . . . Brown, some alkali.
Native Vegetation . .Short grass.
Weather Conditions . Very little precipitation,
chinooks in winter
strong winds.

## A

Circle what you think would be the BEST land use.

Cultivation Grazing

## B

Circle what you think would be the BEST land use.

Cultivation Grazing

## B

Topography . . . . . Quite flat.
Soil Type . . . . . Rich, black.
Native vegetation . . Fescue grass and some aspen trees.
Weather conditions . . Moderate rainfall,
Light winds,
Fairly long frost free season.

## C

Topography. . . . . Hilly terrain with sloughs in the low areas. Many stones on the surface.
Soil Type . . . . . Grey wooded.
Native vegetation . . . Wooded - aspens and spruce, some meadows. Water plants in the wet areas.
Weather conditions . . .Heavy rainfall,
Moderate winds,
Meduim length frost free season.

## C

Circle what you think would be the BEST land use.

Cultivation Grazing

# *Getting to Know Your Region*

*Worksheet*

1. What ecoregion do you live in?

2. Write the general description that is given for your area.

| - Climate | - Topography or terrain | - Natural vegetation |
|---|---|---|
| | | |

3. Look on the soil map to see what kind of soil is common in your area. Write the characteristics of the soil.

4. How is the land used around your community?

5. Is the land around your area best for grazing or cultivation?

   Why?

# Student Resource

## Fact Sheet

## Factors Related to Agricultural Land Use

Some of the factors which determine whether land is more suitable for cultivated crops or grazing.

Factors to consider:

1. Potential yields of cultivated crops - high or low?

   This will determine whether you can operate your farm at a profit.

2. Cost of production. Some things to consider are:

   a) Soil fertility - Will a lot of chemical fertilizer be needed?

   b) Rainfall - Will there be enough moisture to grow crops?

   c) Irrigation potential - Is water available for irrigation?

   d) Rocks - These are a nuisance and should be removed.

   e) Topography - Flat or hilly? Which is better for farming?

3. Land conservation - Forage crops or native vegetation is available for grazing and helps to prevent soil erosion.

Factors Favouring Cultivation

1 - level terrain
2 - good surface and parent soil material
3 - favourable weather conditions (good moisture, long growing season)
4 - extensive areas of land suitable to cultivation (not split by natural barriers)
5 - fertile lands require less fertilization using costly chemical fertilizers

* A farmer would probably choose to use land with these characteristics for cultivation.

Factors Discouraging Cultivation

1 - hilly uneven terrain
2 - poor soil, alkali soils, stony parent soil material or soils which may erode easily such as sand
3 - short growing season or too wet or dry conditions
4 - small choppy parcels of good land

* A farmer would probably choose to use land with these characteristics for grazing.

# Student Resource

## Key Words

| | |
|---|---|
| Topography | The physical features of a place or region which are described by words like flat, hilly, and rolling. |
| Soil Type | Characteristics of soil are described to help classification. Example: texture, colour, composition (sand, silt, clay, humus). |
| Native vegetation | Plants that grow naturally in a given area. |
| Weather | Conditions of the atmosphere including temperature (warm or cold), moisture (wetness or dryness), air movement (calm or windy), and cloud cover (clearness or cloudiness). |
| Cultivation | Tilling (plowing) of the soil to prepare for seeding and raising crops. |
| Grazing | To feed livestock on grass or pasture. |
| Terrain | Surface features of a tract of land. |
| Ecoregion | A large area which has the same climate, landscape, vegetation, and wild life. Because of the large size of these areas, they also include a variety of habitats which reflect local conditions. |
| Climate | The average weather conditions for a place over a period of years. |
| Urbanization | The development of cities or towns. |
| Conservation | Planned management for the preservation of natural resources. |

## Student Resource

### Ecoregions of Alberta

Lands in Alberta can be generally classified into ecoregions. These are large areas which have relatively constant conditions such as soil, terrain, and weather patterns. Various combinations of these factors favour certain types of vegetation. Agriculture is dependent on the vegetation which can be produced on any plot of land. Within the ecoregions and even within the space of one mile in any direction, land features can change significantly enough to favour a whole range of vegetation not typical of the larger land mass.

For example, a flat plain, suitable for crop farming, may be intersected by a coulee or creek bed. Thus, the crop land may give way to a region of land which cannot be tilled. Most farmers would utilize this area as pasture land if it is sufficiently large and if water is available for the livestock.

The following pages summarize the characteristics and show locations of the major ecoregions of Alberta.

# Ecoregions of Alberta

**GRASSLAND**

Climate:

Warmest and driest in the province.
Cold winter, warm summers, chinooks,
high wind velocity.

Topography:

Gently to strongly rolling plains.
Some level glacial lake beds.

Natural Vegetation:

Short and mixed grasslands.

Special features related to Agriculture:

Streambed coulees, badlands.

* Black areas
indicate regional location.

**PARKLAND**

Climate:

Moderate precipitation, temperature
and winds. Peace River region - high
precipitation, short summers. Foothills
region - strong winds and chinooks.

Topography:

Variable: level glacial lake beds, rolling
hilly areas of hummocky moraine.

Natural Vegetation:

Fescue grass and aspen bluffs.
Wetlands-marsh and meadow vegetation.
Some alkali ponds contain only salt
tolerant species.

Special features related to agriculture:

Sand dunes, plains, and badlands.

* Black areas
indicate regional location.

# Ecoregions of Alberta

**BOREAL FOREST**

Climate:

Variable: short summer, high precipitation, cold winter

Topography:

Broad low plains, discontinuous hills. Land is generally low and poorly drained.

Natural Vegetation:

Mostly forested with Poplar, Spruce, Jack pine in Sandy areas. Extensive wetlands contain bogs of peat moss.

* Black areas indicate regional location.

**FOOTHILLS**

Climate:

Variable: high precipitation, summers cool, winters moderate.

Topography:

Folded bedrock, long wide valleys, steep inclines.

Natural Vegetation:

Forested with mixed woods - extensive stands of lodgepole pine with limited understory vegetation. Black spruce in wet areas.

* Black areas indicate regional location.

# Ecoregions of Alberta

**MOUNTAIN**

Climate:

High wind velocity at higher elevations. High precipitation. Some chinook action.

Topography:

Rugged upthrust bedrock creating high elevations, deep gorges, wide valleys.

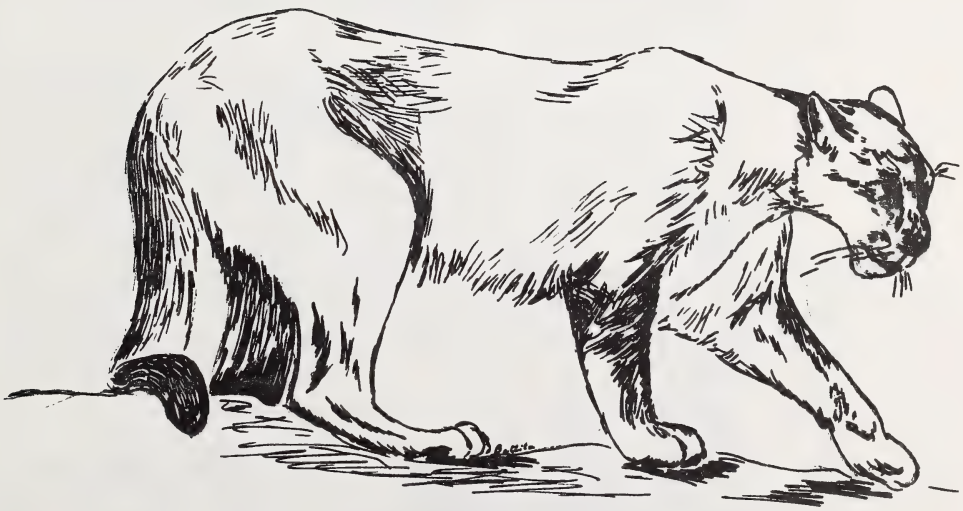
Natural Vegetation:

Montane areas - grasslands, Douglas fir, Limber pine.

Sub-alpine - Forests of fir and spruce which are stunted at higher elevations.

Alpine - Above the tree line. Lush herb meadows.

* Black areas indicate regional location.



## Soil Classification

Soils can be identified and classified in a similar manner to plants and animals. In addition to identifying and describing the various types of soil, it is very useful to map these soils as to their geographic location. A very broad grouping of soils is shown in the Soil Zone map of Alberta enclosed with this lesson. On this map, soils are grouped on the basis of colour of topsoil, which is primarily a reflection of the vegetation and climate prevalent during soil formation.

1. Brown Soil Zone

   Brown soils occur in the semi-arid region of southeastern Alberta. Annual precipitation averages about 300 mm (12 in.) and native vegetation is short-grass prairie type. Lack of moisture has resulted in the development of soils with relatively thin profiles and lower levels of organic matter than the Dark Brown and Black soils to the north and west. Lack of rainfall is the main limitation to crop production in this area.

2. Dark Brown Soil Zone

   Dark Brown soils are similar to the Brown soils but have a greater accumulation of organic matter. The topsoil is darker coloured and usually thicker than in the Brown soil. Average precipitation is about 350 mm (14 in.). The boundary between the Dark Brown and the Brown soil zone is not sharply defined.

3. Black Soil Zone

   The Black soils have formed under grass and parkland. Annual precipitation averages between 375 and 500 mm (15 - 20 in.). The loss of moisture by evaporation from the soil in the Black soil zone is generally less than that from soils in the Brown and Dark Brown soil zones. As you go deeper, the blackish coloured topsoil shades through the browns to a lighter coloured parent material. The moisture supply is adequate for abundant vegetation but has not caused excessive leaching. Because of the high organic matter content and higher precipitation in this zone, the productivity of Black soil is quite high.

4. Dark Gray and Dark Gray Wooded Soil Zone

   Dark Gray and Dark Gray Wooded soils occur generally to the west and north of the Black soil zone. This soil zone represents a transition in climate, vegetation, and resultant soil colour from the Black to the Gray Wooded

soil zone. During development, these soils have been influenced alternately by grass and tree vegetation. Therefore, soil development has been affected by both calcification and acid leaching soil forming processes. The area is now primarily mixed woodlands, with the evergreens more common in the colder (higher) sections.

5. Gray Wooded Soil Zone

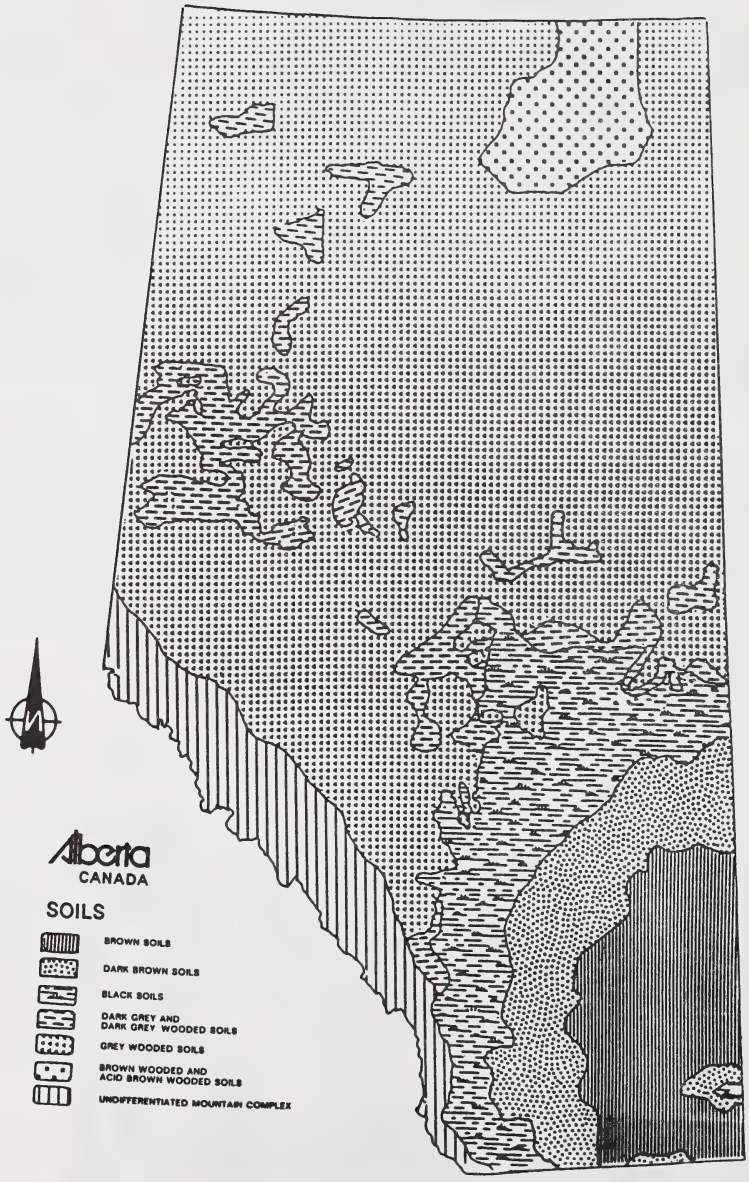
The soil profile in the Gray Wooded (Luvisolic) zone can be variable. Except in burnt over areas, a thin layer of partially decomposed acid organic material lies above a deeply leached surface soil ranging in colour from grey-brown to dark grey. This layer in turn, breaks into a more compact finely textured sub-soil, often darker in colour. Acid leaching has been the dominant soil forming process. Soil microorganisms in this soil zone tend to break down plant residues into water soluble forms. So although organic matter is often plentiful at the surface, many of the products of its decomposition are leached downward out of the surface soil. Consequently, the natural fertility of the Gray wooded soils is relatively low.

Although the Soil Zone map provides an overview of soil-climatic areas of the province, it is of little use in a detailed assessment of soil and land resources on a regional, county, or individual parcel basis. In Canada, land resource information has been developed using the Canadian System of Soil Classification. Soil surveys have been conducted, and reports and maps published. Canada Land Inventory (CLI) soil rating maps have been developed from the survey information. These maps and reports are discussed later in this lesson.

Farm Home Study Course.
Alberta Agriculture

# Teacher Resource

## Soil Zone Map



# Teacher Resource

## Acreages of CLI Soils Subclasses in Alberta

| CLASS | LIMITATION TO RANGE OF CEREAL CROPS | THOUSAND HECTARES | THOUSAND ACRES[2] | PERCENT OF TOTAL SURVEYED | PERCENT OF TOTAL AREA OF PROVINCE[3] |
|---|---|---|---|---|---|
| 1 | None | 775 | 2 000 | 2% | 1% |
| 2 | Moderate | 4 000 | 10 000 | 9% | 6% |
| 3 | Moderately Severe | 6 000 | 15 000 | 14% | 10% |
| 4 | Severe | 10 000 | 24 000 | 22% | 15% |
| 5 | Improved Pasture | 12 000 | 29 000 | 26% | |
| 6 | Non-improvable | 3 000 | 7 000 | 7% | |
| 7 | Nonagricultural | 5 000 | 12 000 | 11% | |
| Organic | (More than 12" Peat) | 4 000 | 10 000 | 9% | |
| TOTAL AREA CLI SURVEYED | | 44 000 | 109 000 | 100% | |
| TOTAL LAND AREA OF ALBERTA | | 64 000 | 159 000 | | |

[1] Taken from an estimate of the acreages of the soil capability for agriculture classes in Alberta. Soils Branch, Plant Industry Division, Alberta Agriculture, 1974 (Figures rounded).

[2] Based on predominant soil class.

[3] In the area unsurveyed there is estimated to be very little if any No. 1, 2, 3, or 4 soil.

Source: Alberta Land Use Forum, 1974.

## History of Legislation Which Affected the Land Use in Alberta

The first instance of assigning land to a particular use in Alberta was the granting in 1670 to the Hudson Bay Company the exclusive right to all the land in western Canada for the purpose of fur trading. Title to these lands was only transferred back to Canada in 1870, after confederation. The government of Canada then made grants of land in western Canada to railway companies as an inducement to build the transcontinental railroads, and large areas of the western provinces were made available for colonization under the Homestead Act.

The policy of both the federal and provincial governments after 1905 was to get the land in the west populated as quickly as possible, and little attention was paid to the quality of the land made available. That some of the land was unsuitable became clear when more and more settlers were forced to abandon their homesteads. To prevent future cancellations, a system of agricultural leases was instituted, followed by a system under which land was inspected before it was made available for settlement. Alberta was among the first jurisdictions to establish criteria for land alienation.

In 1905, land ownership in the province of Alberta carried with it most of the rights to use the land as the owner wished. The government retained the right of taxation, mineral rights, and limited rights of eminent domain.

The rapid growth of villages and towns in Alberta made the passing of a planning act necessary to effect orderly development. A brief history of planning in the province is taken from the Land Use Forum Technical Report No. 9:

> "In Alberta, planning legislation began in 1913, and new acts were passed in 1922 and 1928, with zoning beginnings in 1929 when the Town Planning Act was passed."

"The crises of the 1930's led to rural land-use planning and during this period the Prairie Farm Rehabilitation Act was passed in 1935, the Special Areas Act of Alberta in 1938, and the Agricultural Service Board Act in 1945. Numerous amendments of the "Town Planning Act" were made in the thirties until a major revision took place in 1942. The radical change, however, occurred in the amended act of 1950, when interim development control was introduced, as well as provisions for the formation of District Planning Commissions. Thus a clear recognition was made that land use planning was not something which could be confined within a local municipality, but was rather interrelated with outside areas and development,"

From the above, it will be seen that common law, borrowed by Canada from the British, is basic to the development of planning in Alberta. Under common law, land which is owned by individuals may be used only within the constraints laid down by legislation. The owner of the land is considered its custodian and his use of it must not have a detrimental effect on the surrounding property of the community at large, and is subject to the many restrictions thereon. These restrictions may be municipal or provincial in origin. Amongst the provincial legislation which affect agriculture are the following:

1) The Coal Conservation Act gives authority to the Energy Resources Conservation Board to decide which deposits may be mined. This has special significance for agriculture as large deposits of coal are to be found throughout central Alberta. There is also a coal development policy for Alberta which sets out guidelines for coal development on agricultural land subject to appropriate environmental and reclamation controls.

2) The Land Surface Conservation and Reclamation Act outlines the terms under which approvals for mining operations are allowed, and designated responsibility for cleaning up after explorations and

development, and returning the land to productivity. This is of importance to agriculture in cases where land may be adversely affected by extractive operations.

3) The Oil and Gas Conservation Act gives the Energy Resources Conservation Board the authority to allow drilling for oil and gas and locating pipelines.

4) The Surface Rights Act stipulates the conditions which must be met before an exploration or development company may enter private land.

5) The Irrigation Act sets out the administrative machinery which deals with all aspects of irrigation in the province.

6) The Water Resources Act gives the Crown authority over the development of all water diversion and storage developments. The act gives the minister power to make decisions on the location of dams and reservoirs for irrigation, power generation, re-creation, etc.

7) The Public Lands Act regulates planning on public Lands. The terms under which Crown lands may be used for pasture would be determined by this act.

In addition to these legislative and regulatory restrictions on development, there is a Local Authorities Board which acts as a quasi-judicial body enabled by legislation to make decisions on such matters as the annexation of a tract of land by a municipality. The municipality might then develop and land for urban use. As the annexation of land for purposes of urban expansion, establishing airports, or public institutions, or the location of an industrial complex is often at the expense of agricultural land, or land deemed to have value for recreational purposes, conflicts have arisen. In order to make long-range plans, the province set up a Land Use Forum, which after hearing public opinion, reported in 1977. Subsequently the province passed a new planning act.

In general it can be said that key decisions as to the location of urban or industrial development are taken by the cabinet, e.g. whether to proceed with an oil sands plant at Fort McMurray, a petrochemical development at Red Deer, or the de-centralizing of a government department. Communities can direct development which such decisions entail by means of zoning, which would be determined by the general plan. Local opinion is solicited and given consideration. Such a general plan must accord with a regional plan. Regional planning is designed to guide development of a number of communities. The regional plan established general land use classes for the region and designates the permissible uses and densities within each of these classes.

Since expansion for rural and urban residential purposes is responsible for the removal of most agricultural land from production, the subdivision process is governed by the planning act. A proposal for subdivision is put before the appropriate board or commission and it is reviewed to see if it conforms to existing plans for the site, taking all factors into consideration. If approved the plan is endorsed.

Subdivison of land for country residential purposes is restricted on class 1 - 3 land and industrial development is usually directed to class 3 land at best. The province has also established restricted development areas around cities to provide space for utility lines etc. In effect this may provide for the continuing use of this land for agricultural purposes.

There is a concern nevertheless at the amounts of land in each CLI class which have been taken out of agricultural production in Edmonton and Calgary.

In addition to losses due to urban expansion, agricultural land may be lost to production as a result of planning decisions which result in highway or freeway construction which facilitate an increase in country residential living along the route.

Within that part of Alberta which is farmed, there are areas more favourable to certain kinds of production that others, e.g. parts of south-central and southwestern Alberta have an advantage in row crop production, however, compared to British Columbia and Ontario, which have unique fruit growing areas, Alberta's crop potential is relatively limited.

Maintaining the productivity of good agricultural land is the responsibility of the provincial government which undertakes the planning necessary to reduce losses due to erosion or increasing salinity in the case of irrigated lands.

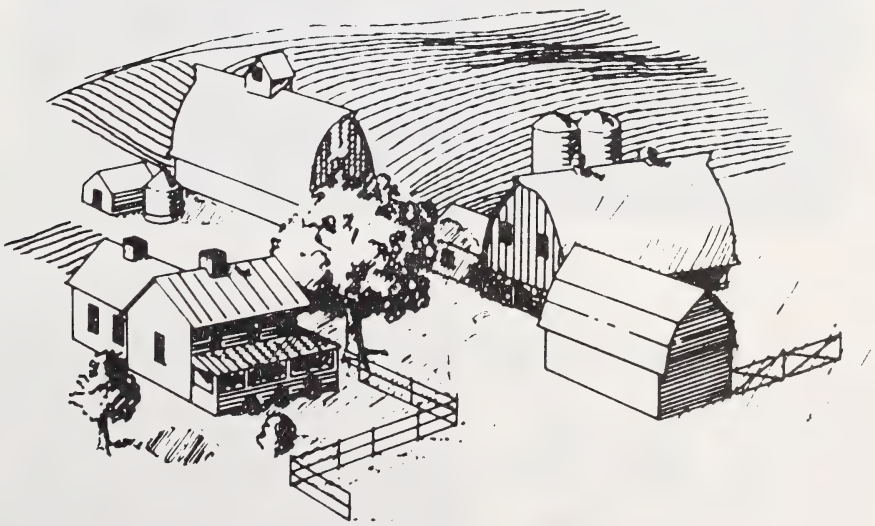
Having farm land available to young beginning farmers has been a concern of many rural organiztaions. Earlier in this publication, rising land costs were shown to be a significant factor in crop production, in addition they present a particular burden to the beginning farmer. In order to limit the competition for farm land from foreign buyers, the provincial government passed legislation in 1977 which restricts ownership of farm land to landed immigrants.

CANADIAN LAND RESOURCES: A comprehensive inventory of land requirements in Canada is not yet completed. Such an inventory should include data on climate, geology, vegetation, soil, landform, water, wildlife, and current use of the land. The existing CLI inventory rates the land capacity for agriculture, forestry, recreation or wildlife, but it covers only the settled areas of Canada, which are about 20 percent of the Canadian land area. Organic soils are not included, although they do have potential for production of certain crops. An Alberta Land Inventory is being prepared. It will deal with those areas not covered by the Canadian Land Inventory.

A national system of land evaluation is presently being prepared. According to CLI data, only seven percent of Canada's land is suitable for pasture. Most of the potential new farmland in Canada is in Alberta, but because of climatic factors, would be only marginal for

field crops. Bringing this land into production would be costly and the productivity per unit of energy consumed would be much lower than that of good soils in climatically favourable areas.

(This Land of Alberta - Alberta Agriculture.) Add any land legislation since 1976.



## Teacher Resource

# LAND OWNERSHIP IN ALBERTA

| Ownership | $km^2$ | Square Miles | Percent |
|---|---|---|---|
| Federal Jurisdiction | | | |
| National Parks | 53,800 | 20,692 | 8.10 |
| Indian Settlements | 6,531 | 2,512 | 0.98 |
| Military Areas etc. | 7,600 | 2,923 | 1.14 |
| | 68,000 | 26,127 | 10.23 |
| Provincial Jurisdiction | | | |
| Provincial Parks | 6,104 | 2,348[1] | 0.91 |
| Wilderness Areas | 6,323 | 2,432 | 0.95 |
| Special Areas | 14,560 | 5,600[2] | 0.95 |
| Metis Colonies | 5,231 | 2,012 | 0.78 |
| Forest Land | 277,560 | 106,754 | 41.78 |
| Swamp, rock, muskeg, & water | 50,073 | 19,259 | 7.54 |
| | 359,853 | 138,405 | 54.22 |
| Privately Owned | 229,840 | 88,400[3] | 34.63 |
| Miscellaneous | | | |
| Roads and Highways | 4,636 | 1,1783[4] | 0.70 |
| Cities and Towns | 1,482 | 570 | 0.22 |
| | 6,117 | 2,353 | 0.92 |
| **TOTAL AREA** | 663,741 | 255,285 | 100.00 |

Source: Assembled from various sources.

1. Includes Willmore Wilderness Park and Historical Sites.
2. 75% of the total Special Areas.
3. 25% of the Special Areas is included.
4. In Technical Report 3, Alberta Land Use Forum.

# ECOREGIONS OF ALBERTA

Grasslands

- located in southern Alberta. The landscape is nearly treeless. The dry climate may limit agricultural production in this region, where irrigation is not feasible.

arkland

located in central Alberta and in some northern regions has a mixed tree and grass cover. This is some of Alberta's most productive agricultural land.

Boreal Forest

- located in northern Alberta. This region is characterized by a nearly continuous tree cover and has limited agricultural value.

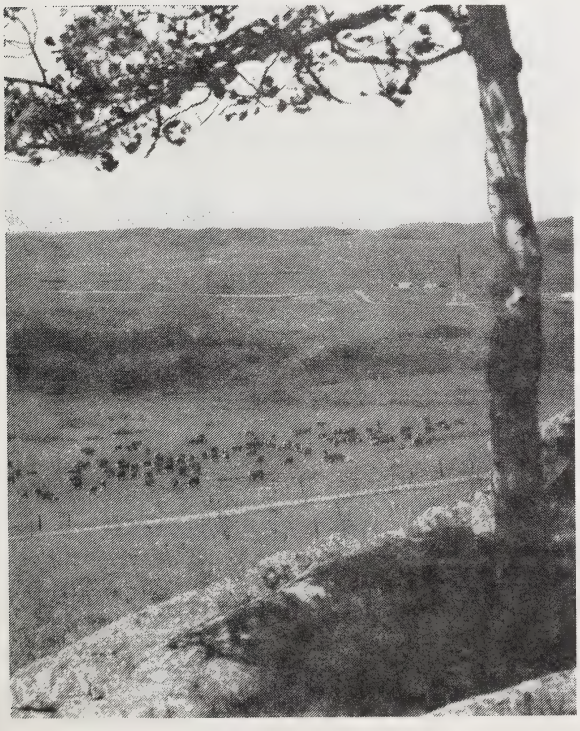
Foothills

The foothills of north western Alberta are steep and mostly tree covered. They provide much of the timber for our lumber industry. In southern Alberta the grass covered foothills are used for cattle rangeland.

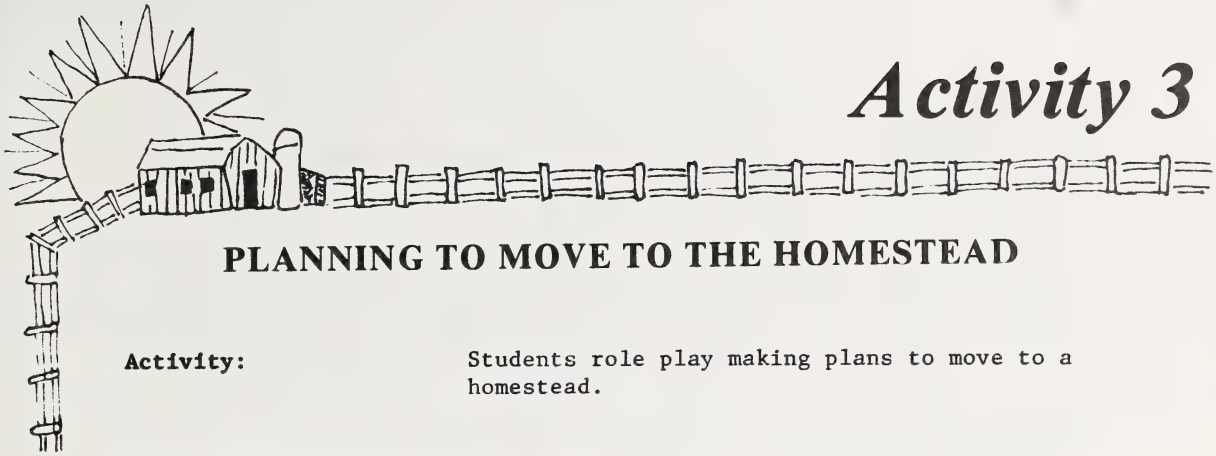
Mountains

Located on Alberta's south western border, these beautiful ranges have little agricultural value.

The flat land is used for crop, the hilly land is used for pasture. Notice the old fashioned stooks in the field. You would not see many fields like this today.



Cattle graze on the stony rangeland of Alberta's southern foothills.



# Activity 3

## PLANNING TO MOVE TO THE HOMESTEAD

**Activity:** Students role play making plans to move to a homestead.

**Subject Area:** Social Studies.

**Curriculum Direction:** Alberta, Past, Present and Future: How people in earlier times met their needs.

Major factors that influenced settlement included transportation and natural resources.

**Major Concepts:** Development, growth, change, resourcefulness, life-style.

**Lesson Concept:** The development of Alberta was the combination of human desire for change, political readiness and demand. Settlers provided the human resources to implement the Government of Canada's plans for development of the west.

**Purpose:** To improve planning skills.

To experience some aspects of the early Alberta settlement.

To develop decision making skills.

To share experiences and feelings of the settlers who chose to move onto the homesteads in Alberta.

**Materials Required:** Art supplies, clay, sticks.
Miscellaneous supplies which may be collected as required. (Example: moss.)

**Time Required:** 1 - 4 class periods.

## BACKGROUND — to the teacher

This activity is closely related to #4 and #5. You may choose to do one or all three of these activities. The major concepts are found in the Social Studies curriculum. The emphasis is on language arts skills. Supplementary activities include role playing, art and physical education skills. I feel your students will enjoy experiencing pioneer life in early Alberta through some of the exercises suggested in these lessons.

The resource material in Lesson 4 and 5 will assist with this lesson.

## PROCEDURE

**Part 1**

Introduction:

1. Discuss the following questions:

   a) How would you feel if your family decided to move to another country?

   b) How would you feel if your whole family was allowed to take only as many things as they could fit into a small van?

2. Review the background information. Read the following to the students:

In this exercise you are going to imagine that this is happening! Do you know that this actually happened to thousands of families who moved to Alberta between 70 and 100 years ago?

Moving from one home to another, changing jobs and starting fresh are huge decisions. Most of us have made one of these decisions once or twice or have known someone who has. Moving from another country to the wilderness of Alberta 70 to 100 years ago was a great decision. Inspite of the many hardships, thousands made that very decision. Some were seeking adventure, but most were looking to improve some aspect of their lives. One way to begin to understand some of the thoughts and feelings of these brave people is to imagine ourselves in their place, at the turn of the century.

This activity will be successful if our imagination takes us back in time so that we can actually be one of the many pioneer families who settled in Alberta. Planning the move, selecting the fertile and sometimes harsh land, and setting out to fulfil the requirements of the homesteading act, will help us to relive a segment of Alberta's human history.

There was a great diversity in the early pioneers. They brought with them many skills and interests. In this lesson, we will focus on the pioneers who came to settle on the homesteads and farm the land.

**Part 2**

Making Plans:

3. Divide the class into small family groups of 4 - 6 members.

4. Have each group choose the family members of the group. These may include grandparents, parents, children, aunts, and uncles.

   Each family group will be asked to pretend that Father and Mother have decided to move to Alberta.

   Groups may choose to dress up for their parts.

5. Review the essay on Settlement in Alberta and the Pioneer possession list supplied in this lesson.

**Part 3**

Sharing with others:

6. Students will be asked to do a short skit about their family making plans and packing for their journey to Alberta.

   At the beginning of each skit, have one member of the group introduce his/her family. Share with the class the following information about your family.

   a) Each family member's name, relationship, and age.
   b) What country is the family coming from?
   c) What year (date) are they moving to Canada?
   d) Why are they moving to Canada?
   e) How did the family make a living in their homeland?

   Follow this introduction with a short 2 - 5 minute skit about the making of arrangements to move - (moving the dog, planning transportation, etc).

**Part 4**

Conclusion:

7. Have the groups prepare a list of the things they will take with them. (Put the name of the group on the top of the list.) These may be displayed on the poster board for a few days.

   Students might want to use the Worksheet "Packing List" and "The Personal Packing List" to assist them with this project.

   These lists may contain pictures of some of the items.

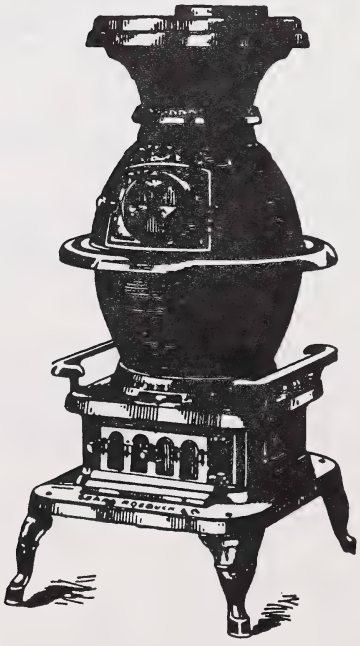
## FOR DISCUSSION

1. Compare the families in this activity.

2. What would the community be like if they became neighbours in Alberta?

## RELATED ACTIVITIES

1. Make travel plans using the worksheet "The Planner".



Worksheet

# *Family Members Personal Packing List*

NAME: _____

What is your relationship in the family. (Father, Mother, Son, Daughter, Aunt, Uncle.)

_____

_____

AGE: _____

I would like to take

1.

2.

3.

4.

5.

# *Preparing A Packing List*

Instructions to Students:

1. Have each member of your group list five items they would like to take with them to Alberta.

2. Make a master list.

3. Have a meeting and revise the list so that it is the most practical for your homesteading family.

4. Make a final list.

5. Compare your list with the pioneer's possessions list supplied with this lesson.

6. What did you forget? What may be unnecessary?

7. What do you plan to purchase when you get to Alberta? How much money do you think a settler would need?

# The Planner

1. What is your country of origin? _____

2. What was your occupation in your native country? _____

3. How many members are there in your immediate family? _____

4. What year are you emigrating to Canada? _____

5. Travel Plans:

Part 1 of the journey

Leaving date _____ Mode of Travel _____

Arrival date _____

Place of Departure _____ Place of Arrival _____

Part 2 of the journey

Leaving date _____ Mode of Travel _____

Arrival date _____

Place of Departure _____ Place of Arrival _____

Part 3 of the journey

Leaving Date _____ Mode of Travel _____

Arrival date _____

Place of Departure _____ Place of Arrival _____

6. The estimated total cost of the trip is: _____

Example:

Leaving Date April 3, 1907 Mode of Travel Ship

Arrival date April 21, 1907

Place of Departure Scotland Place of Arrival Montreal

# Student Resource

## Pioneer Possessions

1. Spinning wheel
2. Wash board
3. Butter churn
4. Nails
5. Teeth for harrows (iron machinery parts)
6. Lanterns
7. Candle molds
8. Hunting rifle and bullets
9. Iron pots and kettles
10. Special kitchen tools
11. Special ornaments
12. Musical instruments
13. Iron
14. Sewing machine
15. Hand tools
16. Toys (dolls, model soldiers, horses and trains)
17. Mattresses and bedding
18. Tables and chairs
19. Stoves and heaters
12. Carpentry tools

A pioneer explains how much it costs to buy supplies in Alberta.

*"It is absurd to think of commencing with less than $600 or $700. Of course, I do not mean when more than one go together. Now take my case for instance. I and another young fellow went together and we bought at the lowest possible rates, and notwithstanding, our outfit for two cost us well on the $1,000 . . . "*

*"Now you take down the list of articles absolutely required," he said to the interviewer. "Yoke of oxen, $240; wagon, $80; plough, $25; tent, $12; stove, $4; two pair blankets, $9; Ox harness, $15; two axes, two saws, one hatchet, two augers, nails etc., $20; logging chain and ropes, $15; four months provisions, $100; total $520."*

*Pen and Plough*

# Student Resource

## Interesting Facts

1. In 1878, Mormon settlers moved into Southern Alberta from the United States and began irrigation farming.

2. In 1881 there were about 1,500 white and metis people living in Alberta.

3. In 1881 surveyors were dividing the land for development.

4. Alberta towns in 1881 were Edmonton, Calgary and Fort Macleod.

5. The Agricultural Society was established in Edmonton in 1879.

6. Ranching flourished in Alberta in the foothills and Cypress Hills area (where the chinooks are frequent) from 1880 - 1900.

7. In 1883 the railroad was completed to Calgary. A stage coach made connections to Edmonton.

8. In 1891 the railroad was completed to Edmonton.

9. In 1897 Klondike gold fever hit. Edmonton became a main supply center.

10. In 1897 the railroad was completed to Lethbridge.

11. In 1911 there was record settlement. 20,000 acres were settled each day. Two new towns were founded each week. Four miles of railroad were built each day.

12. In 1912 Edmonton was a real estate empire with thirty-two real estate brokers, 135 financial agencies and 336 real estate agents.

13. In 1914 oil was found in Turner Valley near Calgary.

14. Farming population increased from 127,379 in 1906 to over 300,000 in 1914.

15. Acres cultivated increased from 650,000 in 1906 to 2,500,000 in 1914.

**Teacher Resource**

**Student Resource**

## Homesteading in Alberta

From 1600 - 1900, Britain acquired a large network of colonies. These new lands added to the wealth of the mother country by supplying raw materials for her industries. Initially, the main Canadian export was fur. Trading posts were established and a brisk business was done in trade items such as beds, blankets and rifles in exchange for fur pelts.

Later, Canada populated the west to stabilize the Canadian economy and bring into agricultural production the vast fertile lands of the prairies. Lumber was harvested to build homes and places of business; the land was broken and seeded in the hope of providing a surplus of grain for international trade.

An extensive advertising campaign was mounted to attract settlers to develop the farm lands of the west. Extravagant claims were made regarding the potential of the land. But the best offer was of homesteads, which could be had for a fee of $10.00 and the subsequent fulfilling of the obligation of living on the land for at least six months of the year and breaking of the land for cropping.

A brave and determined group of people arrived from all over the world to take advantage of this opportunity. Most were successful, and made a major contribution to this province. In turn they had a place to call home, and in most cases were provided with a reasonable living.

In many instances the settlers learned about this new life by doing. Most families and individuals tried to make the best preparations possible, but what they really faced was unknown. In many cases, one of the reasons for moving to Alberta was that they were in some way restricted in their homeland. They may have been unable to own land, or have political or religious freedom. If such were the circumstances, the lack of money was often a problem. Possessions were few and the limited space available for transport to Canada made the sacrifice of even more personal possessions imperative.

Some of the settlers who came to Alberta were experienced farmers, ready to take on the challenges of "Mother Earth". Many settlers arrived knowing other trades: shoemakers, blacksmiths and millers. In order to take advantage of the offer of free land, certain rules had to be met. This meant breaking the land and living on it. In many cases this also meant learning by experience. If you were lucky, there was someone to give you some good advice to help you get through the first few winters.

The cooperation of neighbours was a key to survival and the development of the land. In many communities one person would operate a saw mill while others made roads and built fences. Examples of cooperation were the building bees for barns and homes and the threshing crews which made their way from farm to farm during the harvest season. Neighbours also valued social contacts, which were often hindered by the rugged terrain which could separate one homestead from another.

People who chose to homestead in Alberta had a busy time ahead of them. Just the decision to move was enormous. Then came the planning. Which members of the family would come? In some cases all of the family would make the move, while in others, only one or two members would strike out, with the possibility of sending for the rest of the family once they were established. In any event, there were the inevitable choices of what to take and what to leave behind. Practical items such as dishes and bedding were packed alongside such impractical but cherished items as family photographs, a crystal vase, and a mirror.

Travel plans were made. Usually there would be several modes of transportation taken before reaching the final destination. Ship, train, and some form of horse or oxen drawn cart were common. The railways of Canada had a slim lead on the influx of eager settlers. Weary families were deposited at various train stations where they would start to learn the ropes of land acquisition and development in the west.

Camps of new arrivals were established at the major centers. From here, arrangements would be made to continue to their final destination. Additional supplies were purchased. Supplies such as flour, salt, and other dried goods, as well as horses and livestock, could be obtained at the larger centers. Advice was free. Leaving family members at the camp, the head of the household would travel by wagon to view the land available for homesteading. Often only a corner of the land would be seen before filing a claim. In other cases, helpful residents of the area would suggest suitable quarter sections. Some settlers were able to make excellent choices. Others, through inexperience and a lack of time were forced to make hasty decisions. Either way, homesteads were chosen and new residents moved onto the land.

Depending on the time of arrival, the settlers began work on their property immediately. Most would arrive with some form of portable shelter, such as a tent or a wagon box. These temporary arrangements would not serve as winter protection. The second home for the pioneers was also usually temporary. Made of the materials at hand, it was small and crude. Where timbers could be found and cut, the homes were constructed of logs. On the prairie, the first home was often made of sod. Many settlers spent their first very bitter winter in a partially finished shelter.

Food was another consideration. The variety was often limited to staple supplies such as biscuits made from salt and flour, and whatever game could be had.

The first spring brought a rush of activity. Gardens were cultivated and planted, land was cleared and broken, and repairs and improvements were made to the residence. Fences were constructed to contain livestock, and trails were improved to allow for easier travel. A journey to the nearest store for supplies such as coal oil for the lanterns and parts for implements might be in order.

These courageous people supported each other through the hardships of developing the homesteads. Providing assistance, encouragement and the

much required relief from loneliness, they worked closely together. Some proved up their land and later sold it and moved to the towns to practice a trade, while others turned the virgin land into a profitable farming operation.

The result was homes and livelihood for thousands of people. Traditional agricultural practices were adapted to the needs of the land, and the land provided for the needs of the people. Challenges were met and overcome. Plans were made, adjusted, fulfilled and made again. Alberta's first industry was born. It remains one of the largest and most essential today. The production and distribution of food - agriculture.

*Farm Homes*

*I like a kitchen big enough*
*To hold a rocking chair,*
*With windows looking to the sun,*
*And flowers blooming there.*
*I like big cupboards by the wall,*
*That hold a lot of things,*
*The cups hung up on little hooks,*
*A yellow bird that sings.*

*I like to do my mending there,*
*Where I can watch the road,*
*And see the teams come plodding home,*
*And smell their fragrant load,*
*Of heavy sheaves at stacking time,*
*Or hear the wagons creak,*
*And groan beneath their golden weight,*
*If it is threshing week.*

*I like to have the supper on,*
*And let it simmer slow,*
*With rich brown gravy bubbling up,*
*Around the meat, you know.*
*With apple pie set out to cool*
*And flaky new baked bread,*
*With golden syrup in a bowl*
*And jelly warm and red.*

*I like to have the lamps ashine,*
*With yellow glowing light,*
*And have the kitchen warm and clean*
*When they come in at night.*
*To make a home so snug and dear,*
*That when they work or play,*
*They hold a picture in their hearts*
*Of home, at close of day.*

*Beside Still Waters*
*- Edna Jaques*

# SETTLEMENT

By 1870 the buffalo had been driven from the plains and ranchers began to move into the southern grasslands. Soon after, in 1883, the main line of the Canadian Pacific Railway was completed to Calgary and the first immigrants began to pour into the country. Between 1901 and 1905, when Alberta was incorporated as a province, 40,000 homesteads were granted. A homestead was a grant of land, 160 acres in extent, which could be obtained for the price of $10 and a commitment to make certain improvements during a three-year residence.

Homestead entries for 1913 were over 14,000, an area of 880,000 ha (2.2 million acres) being alienated. The federal and provincial governments which were jointly responsible for homestead policy attempted from the first to get suitable settlers. The census of 1931 gives an idea of their background:

FARMHOLDINGS BY BIRTHPLACE OF OPERATOR

| | |
|---|---|
| Canada | 28% |
| U.S.A. | 22% |
| Great Britain | 17% |
| Poland and Russia | 11% |
| Scandinavia | 5% |
| Others | 17% |

From this we see that most of those claiming homesteads were from other parts of Canada or the U.S.A. where they likely had some farming experience. But large numbers came from central and northern Europe where their farming experience in forested country was especially useful in Canada. The figures do not appear to reflect the actual numbers of Ukrainian pioneers whom we know to have been amongst the earliest, some arriving before the turn of the century. It is likely that they have

been subsumed in another category. The Ukraine as a distinct entity did not exist when many pioneers arrived, so they gave their homeland as Austria, Russia or even Hungary, as the present-day Ukraine was then part of the Autro-Hungarian empire.

In the 1971 Census, Alberta records a total population to 1.6 million. The major groups by country of origin are Great Britain 49%, Germany 17%, Ukraine 9%, Scandinavia 8% and France 6%.

Bad crop years with drought, poor harvesting weather, early frosts, grasshopper infestations and poor grain prices in the years after World War I and the subsequent depression of the early 1930's persuaded many homesteaders to move off the land and resettle on other farms in the newly-opened Peace River country or to live in nearby towns or cities.

The issuing of homesteads without regard to the agricultural potential of the land brought about much human suffering as farmers and their families attempted to sustain themselves under extremely adverse conditions. They faced some difficult problems. When the first traders and settlers came to the prairie provinces there were no weather records. As is now well known, the weather of this region is highly variable, not only from week to week, but especially from year to year. Soils of the open prairies were fundamentally different from those the settlers had been familiar with elsewhere. As a result of those unknowns, some extensive areas of land poorly suited to arable agriculture were plowed to raise grain. The tilling practice then used left the land bare when it was cultivated. The combination of aridity, rather low precipitation and high evaporations, and adverse soil characteristics in some areas soon led to poor yields and extensive soil erosion, about which very little was known. By about 1920 soil erosion and poor yields were such serious problems in parts of southern and southeastern Alberta and in southern and southewestern Saskatchewan that study and classification of soils were begun. An indication of the extend of the problem is given in the 1931 Census which describes over 6,000 farms as abandoned or deserted, comprising 567,000 ha (1.4 m.

acres) including almost 162,000 ha (400,000 acres) of improved land. In one district in east central Alberta, one-third of all farms were listed as deserted.

The provincial government soon recognized that it could not continue to permit settling of land without considering its long-term productive capacity. Thus Alberta was the first government to undertake an agricultural policy whereby land was inspected before settlement to ensure that at least 50% of the land would be suitable for cultivation.

For the last 30 years, Alberta has had the most advanced alienation policy for land of any province in Canada. This means that stringent conditions are set out under which settlement is allowed.

Helicopter Surveys: In the early 1950's forestry officials in Alberta wanted to make long-term plans for the management and development of the province's forest resources. They were eager to avoid a waste of resources and effort by planning forest activities in areas other than those which might eventually be farmed. The Alberta soil survey was therefore requested to do an exploratory soil survey of the vast areas in the northern half of Alberta which were largely unoccupied and for which there was scant knowledge regarding the soils and agricultural potential. An exploratory soil survey of northern Alberta was therefore made employing aerial photography. The aerial photos were interpreted in the laboratory, and field verification was undertaken by using helicopters to move soil surveyors from place to place throughout the whole of northern Alberta.

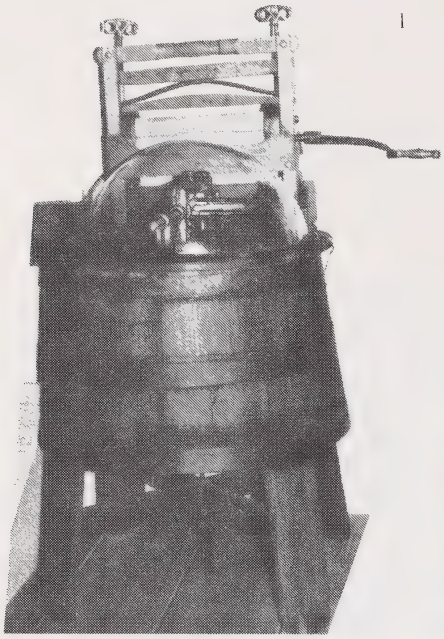
The helicopter exploratory soil survey is thought to be the first use of that technique to obtain a broad assessment of land resources in such a huge area as in the north half of the province of Alberta.

This Land of Alberta - Alberta Agriculture

Charles Bremmers Mother
1910. Provincial
Archives of Alberta.
E. Brown collection B413.

Settler poses in
fashionable clothes.

THE C. AND E. RAILWAY
The Calgary and Edmonton Railway was begun July 8, 1890. In contrast to modern earth moving practices, the grade was laboriously built with horse-drawn ploughs and scrapers.
The railway opened for settlement all the fertile land along its flanks and prepared the way for the development of the vast wealth of northern Alberta. Train whistles sounded the death knell of the stagecoach on the trail and the steamboat on the North Saskatchewan River.



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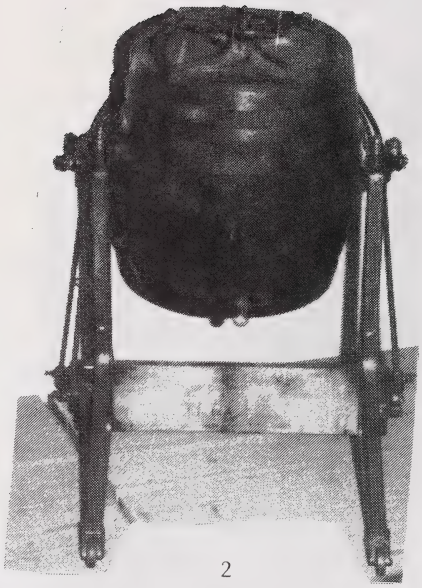

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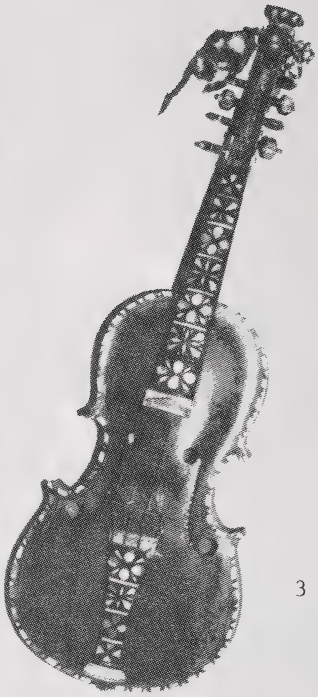

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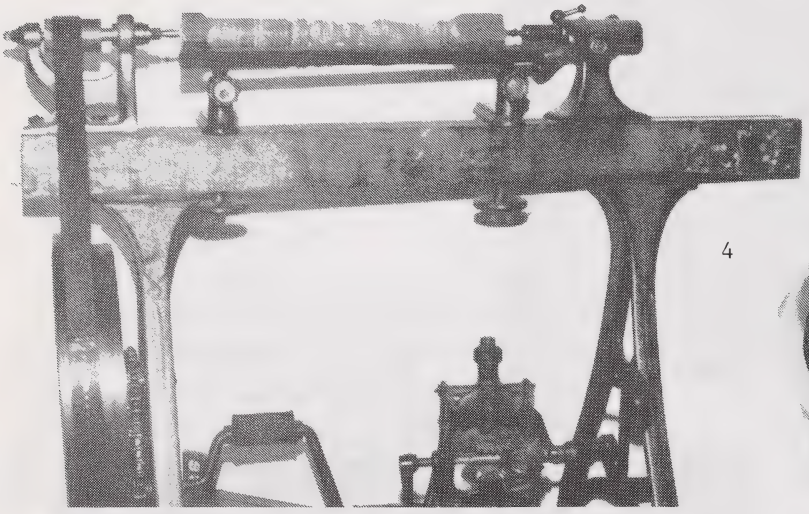

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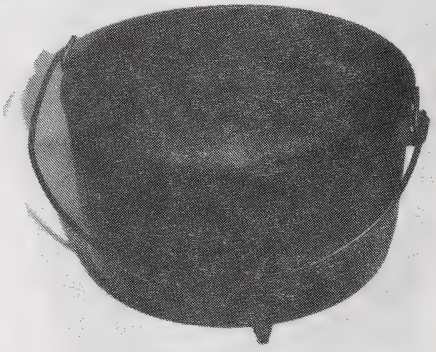

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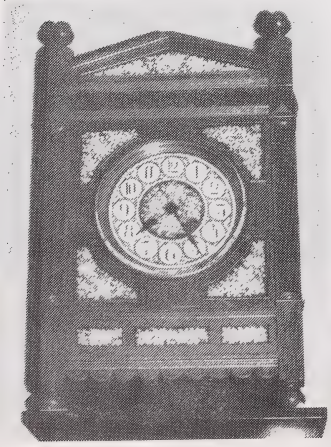


6

## Settlers Effects

included necessities
and cherished treasures

1. Hand operated washing machine.
2. Barrel butter churn.
3. Hardanger voilin from Norway.
4. Foot driven wood lathe.
5. Iron cooking pot.
6. Ornamental clock.

# Activity 4

## FINDING THE HOMESTEAD

**Activity:** Students role play choosing a homestead.

**Subject Area:** Social Studies.

**Curriculum Direction:** Alberta, Past, Present and Future:

How people in earlier times met their needs.
Major factors that influenced settlement.
Transportation and natural resources.

**Major Concepts:** Development, growth, change, resourcefulness, life-style.

**Lesson Concept:** The development of Alberta was the combination of human desire for change, political readiness and demand. Settlers provided the human resources to implement the Government of Canada's plans for development of the west.

**Purpose:** To improve planning skills.

To experience some aspects of the early Alberta settlement.

To develop decision making skills.

To share experiences and feelings with the settlers who chose to move onto the homesteads in Alberta.

**Materials Required:** Art supplies, clay, sticks.
Miscellaneous supplies which may be collected as required. (Example: moss.)

**Time Required:** 1 - 4 class periods.

To the Teacher:

Review the resources in lesson 3 to assist with this lesson.

## PROCEDURE

### Part 1

Introduction:

1. Discuss the maps in this lesson that show the early Alberta settlement patterns.
2. Look at the ecoregion map supplied.
3. Look at the pictures provided of early towns in Alberta. Discuss some of the common features. What can the children see?
   a) dirt streets
   b) small buildings
   c) some typical businesses.
4. If the class has done Lesson 3, have them keep the same groups for this lesson. If they have not done Lesson 3, divide the class into groups of 4 to 6.

### Part 2

Orientation:

5. Teachers may want to help the groups decide where they would be arriving based on the settlement map and the time each group/family chooses to emigrate.
6. Groups should then make a note of the general ecoregion they have chosen so that they can better describe their farm.
7. Have each group do the "Where Am I" Worksheet.

### Part 3

Selecting:

8. Have students imagine that they will now find their homestead. Discuss the procedure of obtaining land in Alberta. They have to find the land they want, then file at the Land Office for title, pay $10.00 and agree to live on the land 6 months of the year and make improvements such as fencing and cultivation.

9. Have each group do the "The Homestead" work sheet.

**Part 5**

Conclusion:

10. Share the information on the worksheets with the class.

11. Prepare a large map of Alberta and show where the class pioneer families have settled.

## FOR DISCUSSION

1. How do you suppose shopping for a homestead in 1900 compares with shopping for a home in 1980?

2. What would be some of the most important features settlers would be looking for in their new homesteads?

3. Do you think you would have liked to be the children of a pioneer family?

## RELATED ACTIVITIES

1. Plan a typical pioneer social function for your pioneer families such as a box social or community dance.

*Dawn Called*

*Dawn called! And out across the plain*
*I heard the prairies move again;*
*I smelled the sage when dawn uncurled*
*Her leaves, for incense to the world;*
*I heard a meadow-lark get up*
*And pour its song in day's new cup.*

*I was the horses, dim and still*
*Against the shadow of a hill,*
*Stand up and shake the sleep away,*
*And snort their challenge to the day;*
*The roosters called across the plain*
*Their thanks that light had come again.*

*I saw Dawn walk with gracious feet,*
*Upon the billows of the wheat;*
*I touched her garments as she passed*
*Into a farmer's house at last,*
*And laughed to hear him softly stir*
*Against the lily hands of her.*

*I saw blue smoke upon the air,*
*I heard a woman singing there,*
*Close by the door and saw her stand*
*And breathe the fragrance of the land;*
*And heard her laughter, clear and sweet,*
*Echoing out across the wheat.*

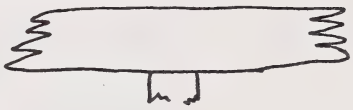
*Dawn called! The prairies answered her;*
*I saw the grasses wake and stir;*
*I heard the breathing of the air;*
*Felt Life abundant everywhere;*
*Saw the glad Earth, where shadows run*
*Drawing her substance from the sun.*

*Beside Still Waters*
*- Edna Jaques*

# Where Am I?

1. The train stops. You gather up your belongings and step off the train on the station platform.

   The sign tells you you are in what town?



2. How many people get off with you? _____

3. Where will you stay until you find your homestead and collect your supplies? A hotel, boarding house, tent?

4. What are some of the businesses in this town?

   1.

   2.

   3.

   4.

   5.

5. Describe or draw what the town looks like.

6. What are the roads like?

7. Are and there many people looking for homesteads?

8. Are the people friendly and helpful?

# The Homestead

1. According to the time you arrived in Alberta, locate the possible areas for your homestead on the Settlement Areas map.

2. Now look at the Ecoregions of Alberta map and decide what type of land you expect to find in that area.

   - parkland
   - prairie
   - boreal forest

3. Imagine that you have gone out to look at the land available and have chosen a homestead.

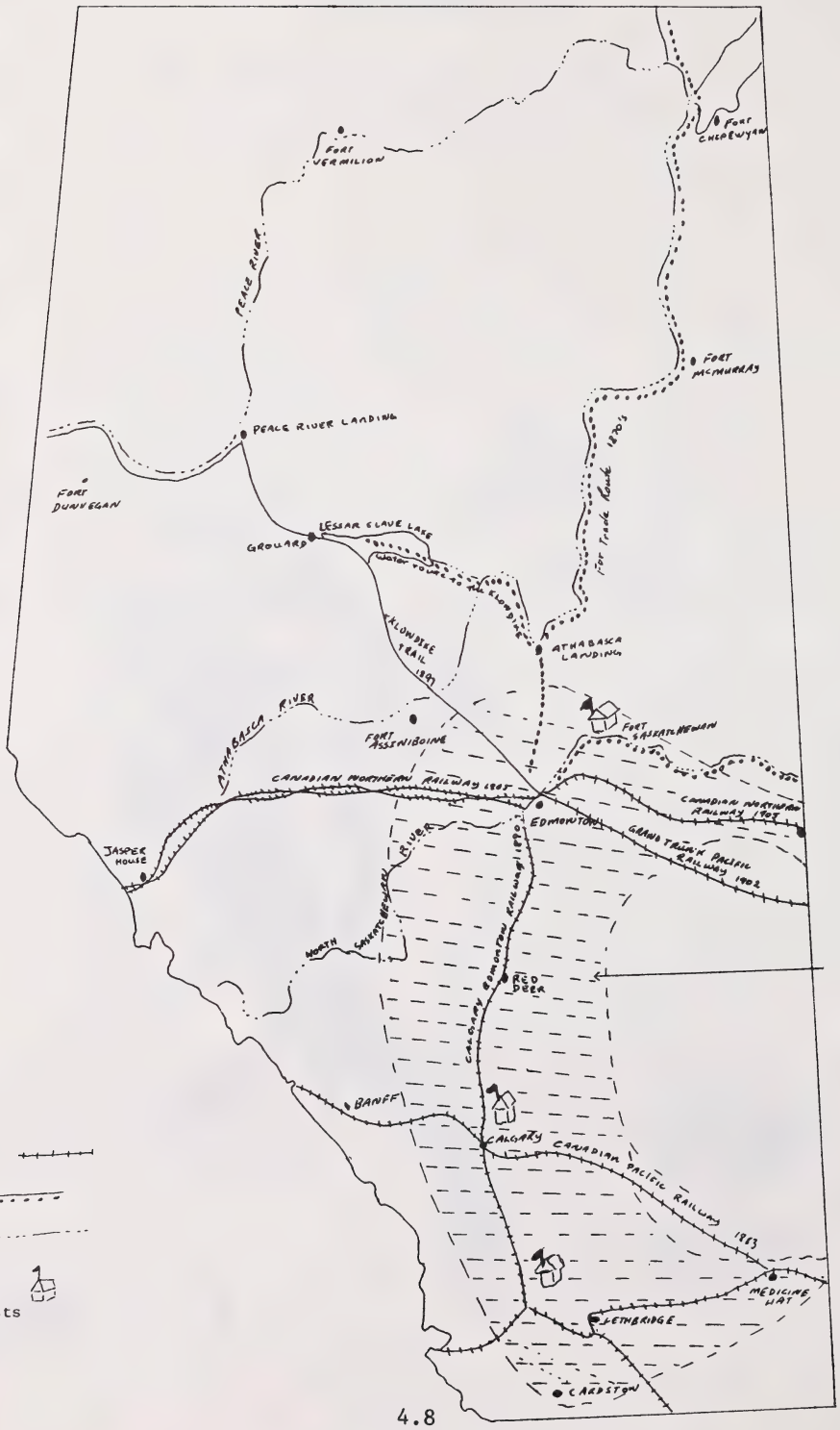
   Briefly describe the land. Describe the types of hills, trees, water, grasses and other features that you might find.

   Draw a general map of the physical features of your quarter section in the square below:

## Ecoregions Map

## Settlement Areas Map

# Early Development in Alberta Map




Settlement crescent 1906 - The bulk of homestead settlement was contained in this shaded area

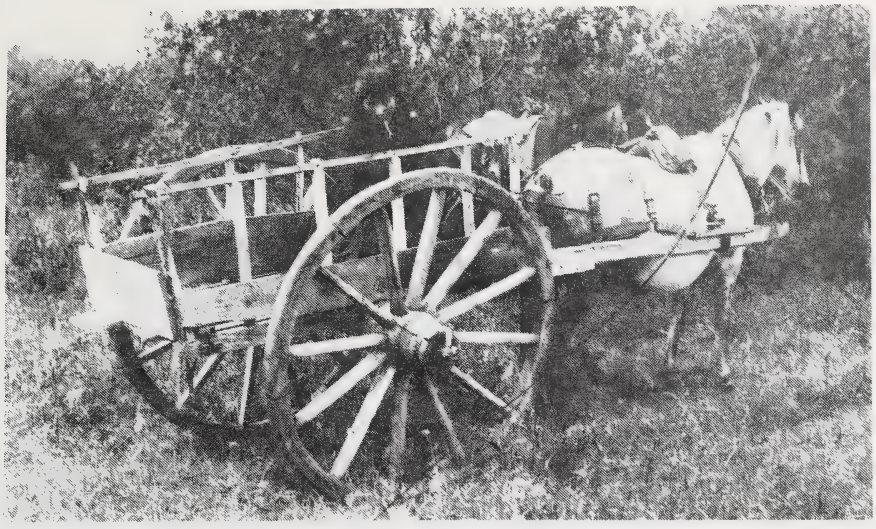
LEGEND

Railroads

Trails

Rivers

Northwest Mounted Police Posts



1. Red River Cart, Pony and Indian B1043.

2. Ox Train on the outskirts of Edmonton returning from a trip to Calgary. 1891 - 1904 E. Brown Collection, B710.

Provincial Archives of Alberta.

Farm House near Calgary 1883 - E. Brown Collection, B119.
Provincial Archives of Alberta.

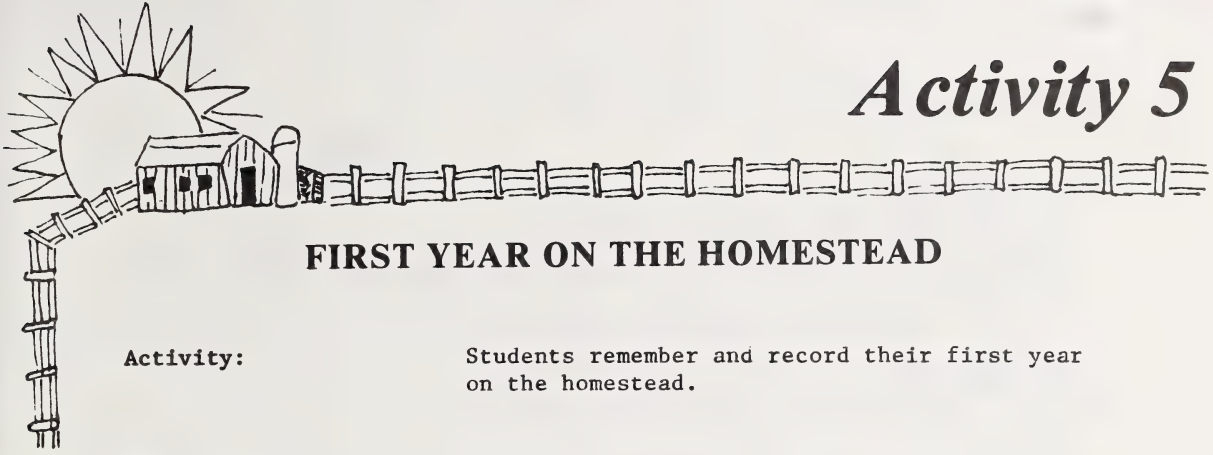
This homesteader built a frame and log home.

Waiting to file on homesteads near Grouard, Alberta, 1912 - A10185.
Provincial Archives of Alberta.

## TOWN BUSINESSES PROVIDED SOME SUPPLIES

(Above) Walker and Reid Store, Lamont, Alberta 1907 A11163.

(Below) Lethbridge Looking South. 1884 - E. Brown Collection B2436, Provincial Archives of Alberta.



# Activity 5

## FIRST YEAR ON THE HOMESTEAD

**Activity:** Students remember and record their first year on the homestead.

**Subject Area:** Social Studies.

**Curriculum Direction:** Alberta, Past, Present and Future: How people in earlier times met their needs.

Major factors that influenced settlement included transportation and natural resources.

**Major Concepts:** Development, growth, change, resourcefulness, life-style.

**Lesson Concept:** The development of Alberta was the combination of human desire for change, political readiness and demand. Settlers provided the human resources to implement the Government of Canada's plans for development of the West.

**Purpose:** To improve planning skills.

To experience some aspects of the early Alberta settlement.

To develop decision making skills.

To share experiences and feelings with the settlers who chose to move onto the homesteads in Alberta.

**Materials Required:** Art supplies, clay, sticks.
Miscellaneous supplies which may be collected as required. (Example: moss.)

**Time Required:** 1 - 4 class periods.

To the Teacher:

Resource material in Lesson 3 and 4 is useful for this lesson. If your class has done Lesson 3 or 4, they will not need much introduction to this lesson.

## PROCEDURE

**Part 1**

Introduction:

1. Discuss the various places pioneers settled.
2. Introduce the Worksheet "My First Home".

   Pioneers made homes from materials that were at hand.

   Prairie farmers often lived in sod huts for the first year.

   Parkland or forest homesteaders often made log cabins.

   Some pioneers used tents or simple board shacks.

**Part 2**

Recording Information:

3. Divide the class into groups which represent pioneer families.
4. Have groups do the worksheet "My First Home".
5. Discuss the information on the worksheet.
6. Have the groups do the worksheet "Life on the Homestead".

**Part 3**

Conclusion:

7. Ask each group to write a short story about their first winter on the homestead. Include comments from all members of the group/family.
8. Share the stories with the class.

## FOR DISCUSSION

1. From doing these exercises, what have you learned about life styles 100 years ago in Alberta?

2. How have farm families changed?

3. What things are found in our kitchens today that pioneers would not know how to operate?

4. What did pioneers use instead of electricity and natural gas?

5. At an average of 30 kilometers a day, how long would it take you to travel from your school to Calgary in 1883 to meet the train?

6. What were some of the things you might do during your days if you were a child in 1901? Do you think you might have attended school?

## RELATED ACTIVITIES

To get a real feel for some of the labours of the pioneer family, students may try some of the following:

1. Find a tree that the town or an individual wants removed and see if the class can dig it up, roots and all, using hand tools.

2. Dig out sods for a garden plot. Figure out how long it would take to cultivate 1 acre at the rate that they can do this chore.

3. Take a walk in a wilderness area and identify as many edible items as possible.

4. Have a wood chopping competition.

5. Make a model of a pioneer home.

6. Using the maps of your land in lesson #4, explain to the class how your family developed their farm.

7. Make some biscuits and/or other pioneer food to share with the class.

8. Preserve some fruit by drying or canning.

Worksheet

# My First Home

1. What building materials did you use?

2. Who built it?

3. How big was it?

4. What kind of furniture did you have?

5. Was your home comfortable?

6. Draw a picture of your first home.

# *Life On The Homestead*

1. Can you name a piece of early machinery you may have used on the homestead?

2. Did you have a horse or an ox to help with the work?

3. What was some of the food you ate?

4. Where did your food come from?

5. Where did you go shopping?

6. How did you travel from place to place?

*Homesteaders*

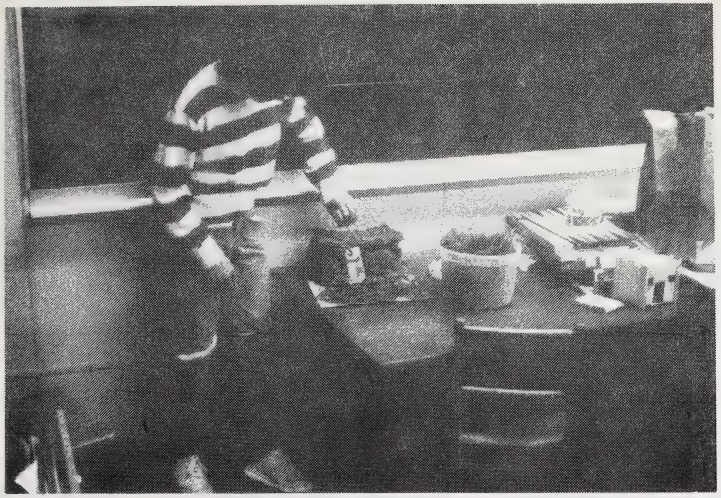
*Pushing the frontiers further*
*Back with relentless hands,*
*Blazing the trail with a plowshare,*
*Far in the hinterlands;*
*Holding fast to their birthright,*
*Born to the realm of toil;*
*Bearded, grim and unconquered,*
*Ragged kings of the soil.*

*Building their lonely cabins,*
*Staking their homestead claim;*
*Beating the trail to Somewhere,*
*Steady, fearless and game,*
*Bounded by sky and muskeg,*
*Hedged by the vast unknown,*
*Earning their hundred and sixty,*
*Winning their fight alone.*

*Theirs is the dream eternal,*
*Hills that are rugged and green;*
*Lure of the far horizon,*
*Prairies, wind-swept and clean.*
*Visioning towns in the making,*
*Faith in the intried lands,*
*Holding the country's future,*
*Safe in their calloused hands.*

*Beside Still Waters*
*- Edna Jaques*

# SOD HOUSES



the students model.

Hines Creek Student displays a model of sod hut.



the settlers model

Sod House
"The beginning of
better things".

Buffalo bones in
front - 1904.

E. Brown Collection
B723 Provincial
Archives of Alberta.

Co-operation makes a hard job easier.

Barn Raising Bee
Red Water District
1930 A2216.

Provincial Archives
of Alberta.

Stooks in front of an old barn at Fort Edmonton Park.

Al Kosmak.

SOME HOMESTEADERS FOUND WORK IN THE TOWNS
-- Steam ditcher at work, 1907. E. Brown Collection B1316

TRAVEL IN THE SUMMER SEASON COULD BE PLEASANT
The Fort Saskatchewan trail, 1891 - 1904. E. Brown Collection B716, Provincial Archives of Alberta.

MACHINES WERE INVENTED TO HELP WITH THE WORK
- "Brush Hog" McCormick Deering Stettler Alberta A7753.
Provincial Archives of Alberta.

# Activity 6

## INTERNATIONAL SUPPER

**Activity:** Students research the origins of the food they eat.

**Subject:** Social Studies.

**Curriculum Direction:** Alberta's Links with Canada and the World.

**Major Concept:** Trade.

**Lesson Concepts:** Food products are one of Alberta's major trade items.

A meal can be an international food experience.

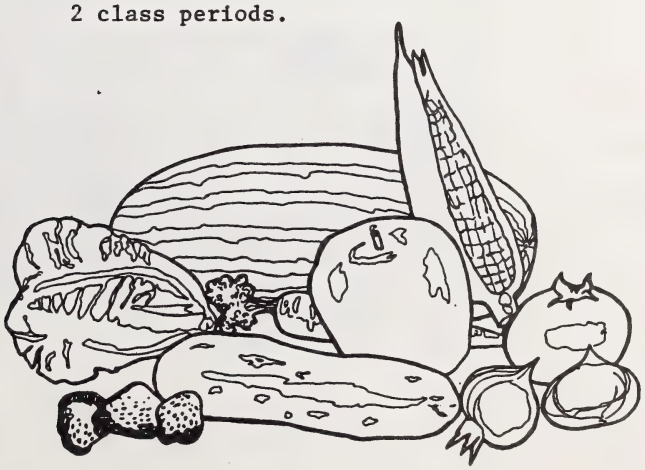
Food imports supply the variety in our menus.

**Purpose:** To understand how each of us is dependent on Alberta's relations with Canada and the World.

To improve the skills of selecting and grouping.

**Materials Required:** Art supplies.
Food product labels.

**Time Required:** 2 class periods.



## BACKGROUND — to the teacher

The food we eat comes from a variety of sources. Some is raised right here in Alberta. Some comes from as far away as Australia, and South America. Food products make up a large percentage of Alberta's trade.

Food also comes to us in many different forms. Some, such as lettuce, potatoes, and other fresh vegetables, are marketed in a natural state. These require very little processing. Some food products are extensively refined and processed before we eat them. Sugar beets and canola are two good examples of crops which require extensive processing.

This lesson presents the students with the problem of finding the origin of their food. They will discover some of the food processing plants that are located in their province. Alberta's trading relationships with other food producing countries of the world are essential for us to enjoy the variety of food on our table.

## PROCEDURE

**Part 1**

Introduction:

1. Introduce the class to the menu included in this lesson. What is a menu?
2. Explain the work sheet.

Research:

3. Have the students complete the worksheet.
4. As a class or in groups, develop a menu that the class would like to evaluate.
5. Write out the main ingredients that are included in the menu.
6. Have each student choose a different ingredient.
7. The assignment: Find the ingredient at home or in a store and make a copy of the label.

**Part 2**

Evaluation:

8. As a class, use the work sheet provided as a guide to evaluate the ingredients and list them under their various groups.

**Part 3**

Synthesis:

9. Have each child design a label for their ingredient.

Conclusion:

10. Make a large display of the Menu and a collage of the children's labels.

## FOR DISCUSSION

1. How does the season affect the number of processed and imported foods that we eat?
2. What would we eat if we were limited to all Alberta products?
3. What are the advantages of importing food?

## RELATED ACTIVITIES

1. Prepare a week's menu using only Alberta products.
2. Make a large map of Alberta and show the places where food is processed. Sample map included in this lesson.
3. Visit a food processing plant in your area.

# MENU

FRESH VEGETABLE SALAD AND DRESSING

ROAST CHICKEN

FRIED GREEN BEANS AND MUSHROOMS

SCALLOPED POTATOES

APPLE PIE

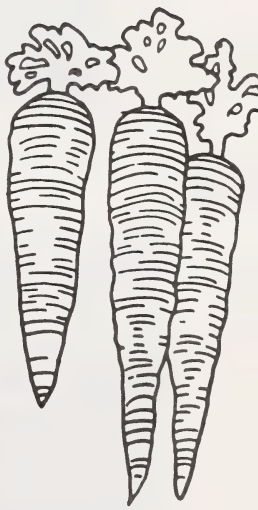
MILK TEA OR COFFEE

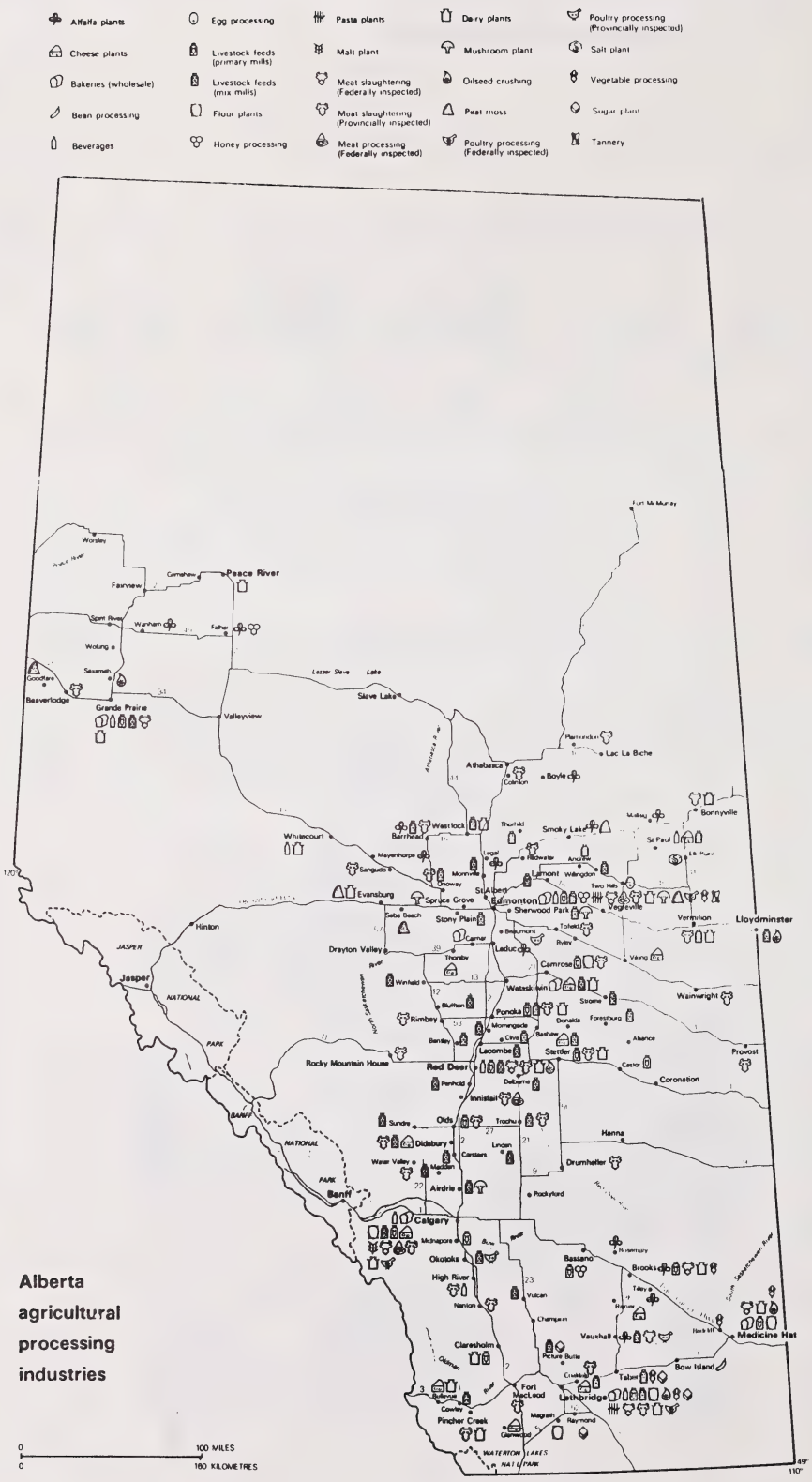
# Product Analysis

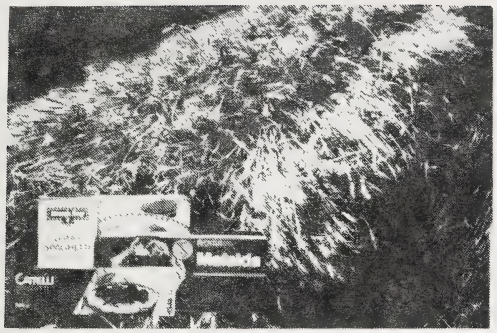
Make a check under each of the factors which describe each of the listed ingredients.

The first ingredient is done for you.

| INGREDIENT | ALBERTA PRODUCT | IMPORTED PRODUCT | REQUIRES LIMITED PROCESSING | REQUIRES EXTENSIVE PROCESSING | PROCESSED IN ALBERTA |
|---|---|---|---|---|---|
| Chicken | X | | X | | X |
| Bread cubes | | | | | |
| Onion | | | | | |
| Celery | | | | | |
| Spices | | | | | |
| Brans | | | | | |
| Mushrooms | | | | | |
| Cream | | | | | |
| Flour | | | | | |
| Potatoes | | | | | |
| Margarine | | | | | |
| Lettuce | | | | | |
| Tomatoes | | | | | |
| Green Onions | | | | | |
| Canola Oil | | | | | |
| Vinegar | | | | | |
| Fresh Apples | | | | | |
| Sugar | | | | | |
| Lemon Juice | | | | | |
| Milk | | | | | |
| Coffee | | | | | |

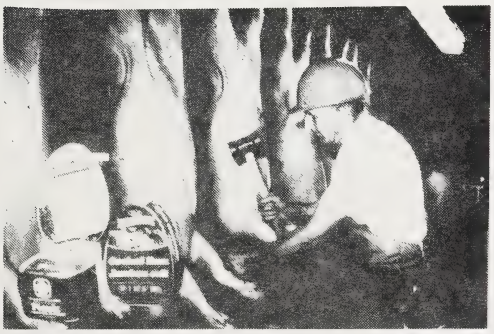



Alfalfa plants
Cheese plants
Bakeries (wholesale)
Bean processing
Beverages
Egg processing
Livestock feeds (primary mills)
Livestock feeds (mix mills)
Flour plants
Honey processing
Pasta plants
Malt plant
Meat slaughtering (Federally inspected)
Meat slaughtering (Provincially inspected)
Meat processing (Federally inspected)
Dairy plants
Mushroom plant
Oilseed crushing
Peat moss
Poultry processing (Federally inspected)
Poultry processing (Provincially inspected)
Salt plant
Vegetable processing
Sugar plant
Tannery
Alberta agricultural processing industries
Peace River
Grande Prairie
Beaverlodge
Valleyview
Slave Lake
Athabasca
Lac La Biche
Fort McMurray
Bonnyville
Westlock
Barrhead
Whitecourt
Smoky Lake
St Paul
Edmonton
St Albert
Sherwood Park
Fort Saskatchewan
Vermilion
Lloydminster
Evansburg
Stony Plain
Drayton Valley
Leduc
Camrose
Wetaskiwin
Wainwright
Hinton
Jasper
Rocky Mountain House
Red Deer
Lacombe
Stettler
Provost
Coronation
Innisfail
Olds
Sundre
Didsbury
Three Hills
Hanna
Drumheller
Banff
Airdrie
Calgary
Okotoks
High River
Bassano
Brooks
Medicine Hat
Vauxhall
Claresholm
Bow Island
Fort MacLeod
Lethbridge
Pincher Creek
Waterton Lakes National Park
100 MILES
160 KILOMETRES



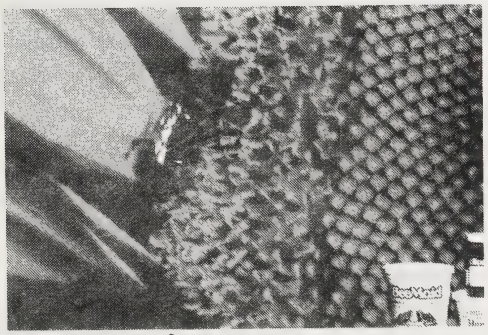
Wheat

Wheat

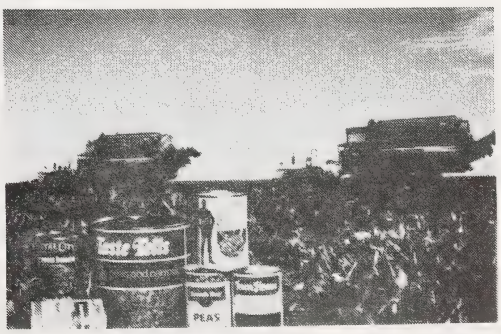


Hogs

Dairy Cattle



Honey Bees



Row crop gardens

# Activity 7

## LOOKING THROUGH DIFFERENT EYES

**Activity:** Students become reporters from outer space.

**Subject Area:** Language Arts and Social Studies.

**Curriculum Direction:** Creative writing and observation.

**Major Concepts:**
Geographic Regions.
Industry.
Resource development.
Employment.
Meeting human needs.
Technology.
Productivity.
Trade.

**Lesson Concept:** What can be learned by using our observation skills? The importance of accurately communicating our observations to others. The limitation of direct observations.

**Purpose:**
To encourage students to use their imaginations by entering the fantasy world of outer space.

To practice descriptive writing skills. To practice formulating theories.

To enjoy a creative look at one of Alberta's major industries.

To assist understanding of various lifestyles and agricultural enterprises in Alberta.

**Materials Required:** Supplied in this lesson.

**Time Required:** 1 - 2 class periods.

## BACKGROUND — to the teacher

A drive through the country in Alberta usually has us admiring or commenting on the sights we see from the car window. Frequently, we find ourselves observing farms of various descriptions. These are a part of one of Alberta's oldest and largest industries - agriculture. Cultivating the land, harvesting a variety of crops, and managing livestock are part of the large and small farming operations which contribute to the big business of feeding the nation. Surplus produce and by-products find their markets in Canada and around the world.

Often, it seems we take this big business for granted. We may not notice what's really going on in rural Alberta as we travel from place to place. If we took a closer look, we would probably make some interesting discoveries. While all agriculture is dependent on such things as soil productivity and weather, there is a tremendous amount of variety to be found on Alberta's farms. Take size for example. In one instance, a livelihood can be made on only a few acres in an intensified operation such as mushroom production or raising broiler chickens. This can easily be compared to the huge cattle ranges and crop farms of southern Alberta where thousands of acres may be a part of one operation. There is also a tremendous variety in the products, the machinery, and farming methods.

In this lesson, students will practise their descriptive writing skills.

## PROCEDURE

**Part 1**

Introduction:

In this exercise the students will put themselves in a little different observing position.

They are to imagine that they are residents of a different planet and have been sent on a fact finding mission to earth. They are to observe the activities of earthlings in rural areas of Alberta.

**Part 2**

The Task:

The aliens are to collect as much information as possible and write up a description of their findings for the information bank on the mother ship.

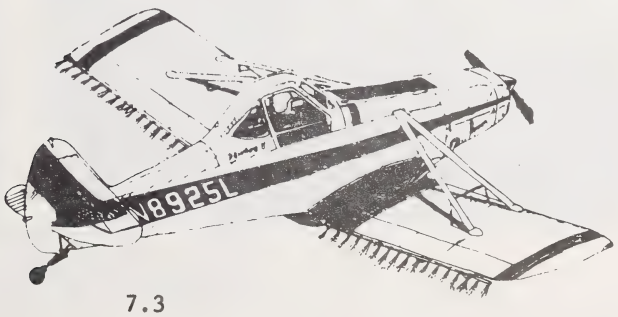
The class may work on this exercise individually or in groups. If you choose groups, you may want to assign a different region of Alberta to each group.

The report should be approximately one page in length and should include such observations as: evidence of buildings, machinery, animals and human activity. Include speculations as to what is really going on. Remember this is an alien report so the reporters are relying on observation and speculation, not experience.

**Part 3**

Conclusion:

Have the students do a good copy of their report. They may wish to prepare some illustrations to support the written accounts. If time allows, the reports may be presented to the class.



**FOR DISCUSSION**

1. What were some of the most common observations made?

2. Is the agriculture industry restricted to rural Alberta?

3. In what ways can we observe agriculture in the towns and cities?

4. How do the rural and urban agriculture enterprises cooperate with each other?

**RELATED ACTIVITIES**

1. Make a collage of pictures that show scenes of agricultural activities that the aliens may have seen on their mission.

2. Write a brief description of some of the things that may be seen in rural Alberta in the year 2085.

3. Write a short poem about your favourite farm animal.

4. Make a class list of words that are commonly used in reference to agriculture. These may appear in the essays that the class wrote.

**EYE IN THE SKY**
Views of Alberta

# *Activity 8*

## DISCOVERING DAIRYING

**Activity:** Students read resource material to find answers to a crossword puzzle and a questionnaire.

**Subject Area:** Language Arts and Social Studies.

**Curriculum Direction:** Reading for understanding.

Alberta, Past, Present and Future:

Major factors that influenced settlement.
Our human resources.

**Major Concept:** Research leads to changes in lifestyle and industry.

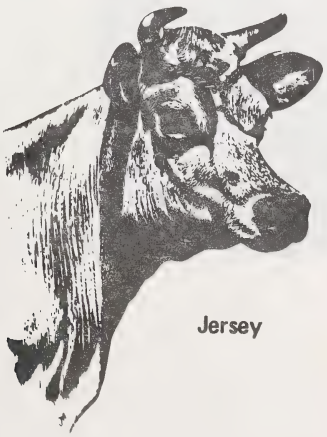
**Lesson Concept:** The modern dairy industry has a long and interesting history in Alberta.

**Purpose:** To practise reading and comprehension.

To familiarize students with some background on one of their common foods - milk.

**Materials Required:** Supplied in this lesson.

**Time Required:** 30 minutes.



Jersey

## BACKGROUND — to the teacher

DAIRYING IN CANADA

When Eurpoeans arrived in North America, there were no cattle. The first attempt to raise cattle in Canada was on Sable Island when, in 1518, Baron DeLery tried to colonize the island. The herd was abandoned when the colony failed. There were cattle on the island until 1630 when they were killed by Puritans from Massachusetts. Imports in 1541 and 1598 failed when all the cattle were slaughtered for food.

The first successful herd was brought to Lower Canada by Champlain in 1608 or 1610. Other colonists also brought livestock. Dutch colonists brought 103 head of cattle in 1625 (likely Fresians). Puritans from the United States brought cattle as well.

As the settlers moved west, they took their animals. By 1846 there were 70 cow dairy herds near Victoria, B.C.

Early dairying was done on a small scale with families producing enough milk, cheese and butter to meet their own needs. It is interesting that Canada was exporting dairy products as early as 1764.

Todays industry has grown from its small beginnings. The following developments contributed to the diary industry in Canada and Alberta.

## PROCEDURE

Activity 1: 1. Use the background information provided to complete the Dairy Crossword Puzzle.

Activity 2: 2. Complete the worksheet "Make Mine Milk"

## FOR DISCUSSION

1. Milk from cows is a major part of our diet in North America. Is this true of the rest of the world's population? If not, how do they supply their nutritional needs?

## RELATED ACTIVITIES

1. Take your class on a field trip to a dairy farm or milk processing plant.

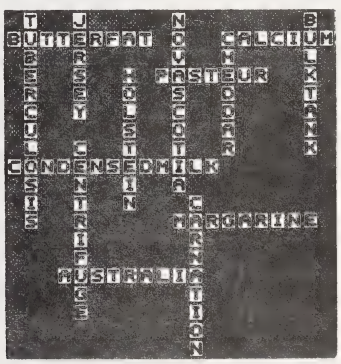
2. Learn to distinguish different types of dairy cattle from pictures. Research history of these animals and how they were brought to Canada.

3. Research pasteurization and write a report on this process.

WORD LIST FOR THE DAIRY CROSSWORD PUZZLE

AUSTRALIA
BUTTERFAT
BULKTANK
CALCIUM
CARNATION
CENTRIFUGE
CHEDDAR
CONDENSED MILK
HOLSTEIN
JERSEY
MARGARINE
NOVA SCOTIA
PASTEUR
TUBERCULOSIS

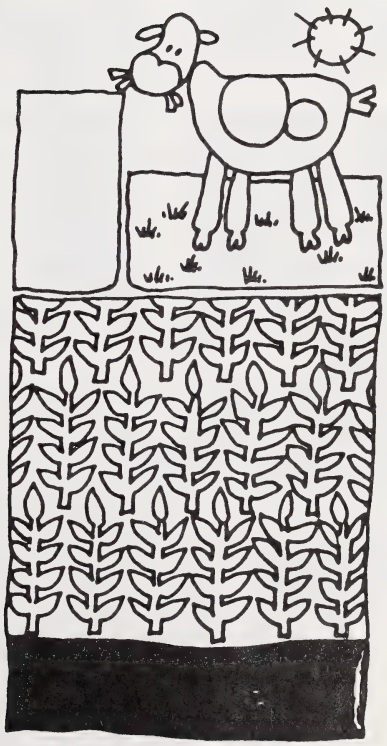
ANSWERS TO THE DAIRY CROSSWORD PUZZLE



## Canadian Dairy History — A Time Line

| | |
|---|---|
| 1518 | Cattle brought to Canada (Sable Island). |
| 1660-65 | Dairy cattle brought to Quebec from Normandy and Brittany. |
| 1764 | Cheese exported from Nova Scotia. |
| 1821 | The Ayrshire is introduced to Canada from West Scotland. |
| 1825 | The Shorthorn is introduced to Canada from the United States. |
| 1850 | Jersey introduced to Canada from England (Royal Herd). |
| 1856 | Louis Pasteur begins experiments that lead to a process called pasteurization, a means of destroying harmful bacteria in milk be heating to 71°C followed by rapid cooling. |
| 1864 | The first cheese plant built in Canada opens in North Norwich, Ontario. |
| 1873 | Canada's first creamery is opened at Helena, Quebec. |
| 1878 | Guernsey cattle are introduced to Canada from the Channel Isles. |
| 1881 | Milk and cream are separated by centrifuge. |
| 1881 | Holstein-Fresian cattle are introduced to Canada from the United States. |
| 1883 | First major exhibit of dairy cattle in Canada (Toronto). |
| 1883 | First condensed milk is made in Canada at Truro, Nova Scotia. |
| 1890 | Stephan Babcock develops a simple test for butterfat. |
| 1891 | Stephan Babcock's butterfat test is introduced to Canada. |
| 1893 | A dairy program is established at the Ontario Agricultural College at Guelph. |
| 1893 | Ontario cheese makers made a 10-ton (103,000 liter) cheddar for the Chicago World Fair. Record held for size until 1964. |
| 1895 | First commercial machines for pasteurization used. |
| 1903 | Alexander Gillies of Australia assembles the first modern milking machine. |
| 1904 | The first commercial dried milk is produced in Canada. |
| 1914 | All dairy cattle must be tested for tuberculosis. |
| 1919 | Regulation is approved to establish and maintain tuberculosis free herds. |
| 1921 | Dairy Produce Act - grading of dairy products begins. |

| | |
|---|---|
| 1923 | Importation and manufacture of margarine is banned. |
| 1939 | The Cheese and Cheese Factory Improvement Act is passed to promote quality of cheese production. |
| 1947 | Dairy Products are displayed at the Toronto Royal Fair. |
| 1948 | Ultra-high temperature pasteurization of milk is introduced. |
| 1948 | The section of the Dairy Act banning the sale of margarine was lifted. |
| 1955 | Flavour control equipment for milk is introduced commercially. |
| 1957 | A Brucellosis control program is introduced. |
| 1967 | Non-dairy substitutes are introduced to the market. |



# Student Resource

## Alberta Dairy History

| | |
|---|---|
| 1890 | First Alberta butter is made at Big Hill Springs (north of Cochrane). |
| 1890-94 | Cheese plants open at Cardston, Springbank, St. Albert, Poplar Lake, and St. Saskatchewan. |
| 1894 | Butter and cheese factory in Innisfail opens. |
| 1906 | Dairy Branch of Alberta Agriculture is formed. |
| 1907 | Butter grading in Alberta commences. |
| 1908 | Pasteurizing and bottling equipment arrive at Edmonton. |
| 1919 | Alberta Dairymen's Association is formed. |
| 1921 | Department of Dairying is established at the University of Alberta. |
| 1922 | Milk buying stations are abolished. |
| 1923 | Federal produce grading service grades butter and cheese. |
| 1924 | Central Alberta Dairy Pool is formed. |
| 1926 | Instruction on Dairy Cattle Judging at the Vegreville Exhibition Boys Camp. |
| 1927 | Boys' and Girls' Dairy Calf Club is organized at Lethbridge. |
| 1928 | Northern Alberta Dairy Pool is formed. |
| 1931 | Calgary Milk Producers Cooperative is formed. |
| 1934 | Alberta Milk Producers Cooperative is formed. |
| 1955 | First farm bulk milk tank is installed in the Lethbridge area. |
| 1956 | First bulk milk hauling truck is used. |
| 1962 | Safeway opened the first "all ice cream" plant in Edmonton. |
| 1962 | Evaporated milk plant opens in Wetaskiwin (Carnation). |

*Worksheet*

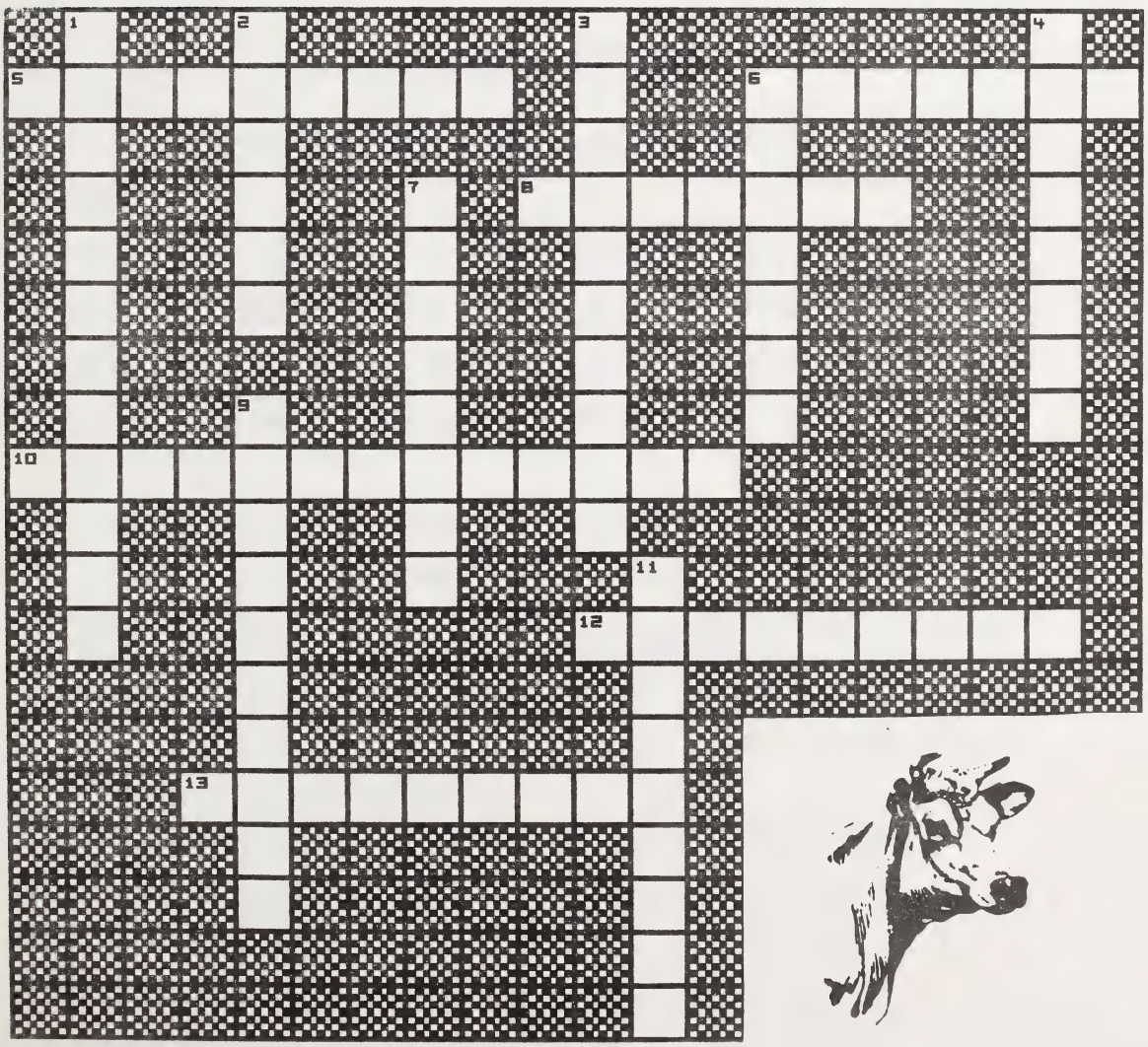
# *Dairy Crossword Puzzle*

DOWN CLUES

1. By 1914, all dairy cattle had to be tested for this disease.
2. The first group of cows bred to come to Canada were from England's Royal Herd.
3. Cheese was exported from this province in 1764. (Two words.)
4. This form of milk storage was first installed in Lethbridge.
6. A 10 ton piece of this was entered in the Chicago World's Fair.
9. By 1881 this process was used to separate cream from milk.
11. This company built an evaporated milk plant in Wetaskiwin.

ACROSS CLUES

5. Stephen Babcock developed a test for this milk component.
6. Milk is a good source of this nutrient.
8. This man experimented with a process called Pasteurization.
10. This was first made in Canada at Truro, Nova Scotia. (Two words.)
12. Importing and manufacturing this dairy substitute was banned in 1923.
13. The first modern milking machine was assembled in this country.



# Student Resource

ACTIVITY II

Recent developments in storage and processing have increased the popularity of milk products. Pasteurization was the main factor in the increase in milk consumption. This meant that everyone could have clean, healthy milk.

Once milk products could be stored, the variety of milk products in the daily diet increased. In addition to milk, cheese and butter; soft cheese, yogurt and ice cream became a regular part of the daily diet. Many of these foods had not been common because they could not be stored.

## MILK PRODUCTS IN OUR DIET

Products from cows - meat and milk - are part of a balanced daily diet. According to the Canada Food Guide, you should eat the following selection of foods every day to supply all of the necessary nutrients.

| | | |
|---|---|---|
| 1. | Milk (or Dairy Products) | 3-4 servings |
| 2. | Meat, fish, poultry or alternates | 2 servings |
| 3. | Vegetables and fruit | 4-5 servings |
| 4. | Bread and cereals | 3-5 servings |

Milk is one of our most valuable foods. Not only can we use all of it's protein, but it is one of the best sources of calcium, vitamin D and the B vitamins. Without milk, it is almost impossible to get enough calcium. This is important, because calcium is necessary for strong bones and teeth.

As people become fitness conscious, they begin to reduce the number of calories they eat and drink each day. Milk is often reduced in the diet when this happens. It is not necessary. While whole milk has 160 calories per 250 ml, lower calorie milk products such as 2% milk (145 calories), skim milk (90 calories) and buttermilk (90 calories) can be used instead. Remember, milk can be combined to make other flavourful foods such as puddings, cream soups, sauces and cheese. If you do not like the flavour, milk comes in so many forms that you should find several that you like.

INSTRUCTIONS

- Complete the following questions after reading the information summary above.
- Discuss the results of your questionnaire as a class.

1. What process made is possible for everyone to have clean, healthy milk?

_____

2. If you did not have a refrigerator, what milk products would you not have?

_____

_____

3. How many servings of milk should you eat or drink each day?

_____

4. What nutrients does milk supply you with?

_____

_____

5. What are three foods you like that have milk in them?

_____

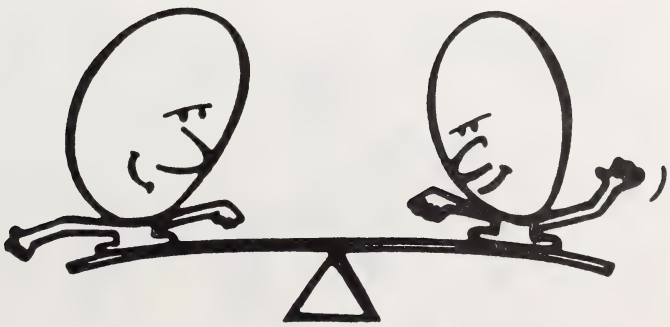
_____

_____

# *Activity 9*

## FUN FACTS

| | |
|---|---|
| **Activity:** | A multiple choice quiz on Agriculture. |
| **Subject Area:** | Language Arts. |
| **Curriculum Direction:** | Reading for Understanding.<br>Communication Skills. |
| **Major Concepts:** | Understanding and relating ideas. |
| **Lesson Concepts:** | Learning about some aspects of a subject.<br>Increase our understanding and interest. |
| **Purpose:** | To share some interesting facts about our Agriculture industry with urban youth. |
| **Materials Required:** | Supplied in this lesson. |
| **Time Required:** | 1 class period. |



## PROCEDURE

**Part 1**

Introduction:

1. Ask students how many think they know any thing about Agriculture.

**Part 2**

The Task:

2. Ask students to attempt to answer the following questions.

**Part 3**

Conclusion:

1. Make up some agriculture trivia of your own.
2. Invite a guest speaker into your classroom and prepare some questions for the interview.
3. Review and discuss the answers.

## FOR DISCUSSION

1. What is the definition of trivia?
2. How many of the questions in the quiz were of a trivial nature?

## RELATED ACTIVITIES

1. What would you like to know about the agriculture industry in Alberta?

KEY - Fun Facts

| | | | |
|---|---|---|---|
| 1. | d | 6. | d |
| 2. | c | 7. | c |
| 3. | d | 8. | b |
| 4. | a | 9. | a |
| 5. | b | 10. | a |

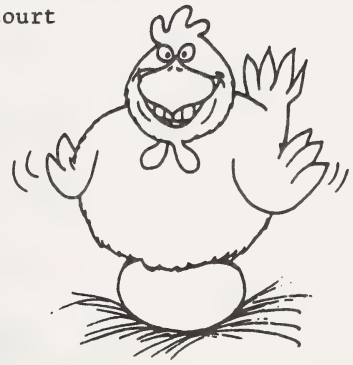
# Fun Facts

1. A large tractor used on an Alberta farm may cost as much as how many small cars?

   a) 50 small cars
   b) 3 small cars
   c) 5 small cars
   d) 15 small cars

2. One acre of land is about the same size as a _____ .

   a) large swimming pool
   b) hockey rink
   c) football field
   d) tennis court



3. A single chicken lays how many eggs per year?

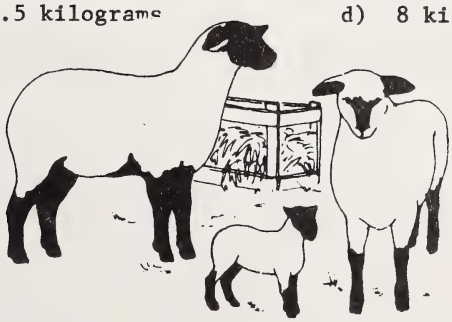
   a) 300
   b) 150
   c) 420
   d) 240

4. Alberta's major export cereal crop is?

   a) Wheat
   b) Oats
   c) Barley
   d) Canola

5. The average 1 year old sheep will produce how many kilos of wool per year?

   a) 10 kilograms
   b) 3.5 kilograms
   c) 2 kilograms
   d) 8 kilograms



6. One beehive can produce how much honey in a season?

a) 10 kilograms
b) 300 kilograms
c) 25 kilograms
d) 75 kilograms

7. One dairy cow produces how many kilograms of milk a day?

a) 10
b) 50
c) 25
d) 15

8. Pigs usually go to market when they weigh about 100 kilograms. How old are pigs when they reach market weight?

a) 2 years
b) 6 months
c) 18 months
d) 1 year

9. One hog produces how many kilograms of bacon?

a) 7
b) 10
c) 2
d) 15

10. What are the measurements of a quarter section of land?

a) ½ mile x ½ mile
b) 1 mile x 1 mile
c) ¼ mile x ¼ mile
d) ¼ mile x ½ mile

N.L.C. - B.N.C.
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